



# **Implementation of Agile Method in Village Web Development (Case Study: Tapus Village)**

**Rahma Pita Kurnia<sup>1\*</sup>, Fajriyah<sup>2</sup>, Jepri Yandi<sup>3</sup>**

<sup>1,2,3</sup>Universitas Prabumulih

[rahmapitakurnia27@gmail.com](mailto:rahmapitakurnia27@gmail.com)<sup>1\*</sup>, [rhievah.mti12@gmail.com](mailto:rhievah.mti12@gmail.com)<sup>2</sup>, [yhandijefry@gmail.com](mailto:yhandijefry@gmail.com)<sup>3</sup>

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## **Abstract**

The advancement of information technology has had a significant impact on various aspects of life, including governance at the village level. However, Tapus Village still relies on traditional methods such as bulletin boards, community meetings, and WhatsApp groups to disseminate information to its residents. These methods have limitations in terms of reach, effectiveness, and information archiving. To address these issues, this study aims to develop a village website for Tapus Village using the Agile Software Development methodology. Agile was chosen due to its flexible and adaptive approach, allowing the system to evolve in response to users' changing needs. The outcome of this research is a village website capable of presenting activity updates and important announcements in a structured and easily accessible format. With the implementation of this website, Tapus Village is expected to enhance transparency, improve service efficiency, and increase community engagement in village development. Moreover, this study demonstrates that the Agile method is effective for developing web-based information systems in village government environments with limited resources.

*Keywords:* Village Website; Agile Software Development; Information System; Transparency; Tapus Village

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## **1. Introduction**

This research applied the Agile Software Development Method, a system development approach that is flexible and adapts quickly to change [1]. A website is a collection of pages within an internet domain, designed for a specific purpose, interconnected, and publicly accessible through a web browser, starting from the front page or homepage with a specific URL [2]. Tapus Village does not yet have a website due to limited budget, lack of qualified human resources, and residents' continued use of traditional methods like bulletin boards and WhatsApp. Furthermore, there is a lack of support from the local government, and concerns about website maintenance and security remain. However, a village website is essential to streamline services and increase information transparency. With a website-based information system, Tapus Village can deliver more structured information, reach more residents, and improve the transparency of public services. Based on the aforementioned issues, the author will write a thesis entitled "**Implementation of Agile Methods in Village Website Development (Case Study: Tapus Village)**"

## **2. Theoretical Review**

### **2.1. Definition of Implementation**

Implementation is the stage where the system design is then implemented in the form of a system or application. The program code and system functionality are implemented according to the specifications established during the design phase [3]. Implementation is the development stage, which begins building the entire system by writing code using the PHP programming language. This is the longest stage, as the system is built until it is ready for operation [4].

### **2.2. Understanding Agile Methods**

The Agile method is a software development approach that emphasizes flexibility, adaptability, and collaboration at every stage of development [5]. In short, the agile development method is a conceptual model with a development approach implemented based on user input [6].

### 2.3. Understanding Development

Development is an effort to improve employee competency in preparation for taking on higher responsibilities in the future [7]. Development is a continuous process aimed at enhancing knowledge, skills, and work attitudes relevant to efforts to improve employee productivity and the overall productivity of the organization [8].

### 2.4. Understanding Xampp

XAMPP is an Apache web server software that includes a MySQL database server and supports PHP programming [9]. XAMPP is a localhost web server that can be used offline. Through XAMPP, users can manage databases on their localhost without requiring internet access. This means that if the internet connection is interrupted, the web server cannot be accessed [10].

### 2.5. Understanding PHP

PHP Hypertext Preprocessor is a scripting language frequently used by web developers to develop websites [10]. PHP is a server-side scripting language, where data processing is performed on the server side. PHP is an acronym for Hypertext Preprocessor, a script-based programming language used to process data and send it back to a web browser as HTML code [11]

## 3. Research Metods

A research method is a scientific method that allows researchers to collect data for specific purposes and uses [12]. The method used to compile this thesis is descriptive with a qualitative approach, namely a comprehensive, broad and in-depth description, and information data in the form of verbal sentences, not symbols or numbers. 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 [13].

### 3.1. Method of collecting data

Data collection methods are the ways researchers gather data to obtain the information needed to achieve research objectives [14]. The data collection methods used in this study included observation, interviews, and literature review. The following methods were used for data collection:

1. Observation  
Observation can be defined as the systematic observation and recording of symptoms observed in the research object. This involves the researcher directly engaging with the daily activities of the people being observed or used as a source of research data. In this study, the researcher conducted observations in Tapus Village, Lembak District, Muara Enim Regency.
2. Interviews  
Interviews are used as a data collection technique when the researcher wants to conduct a preliminary study to identify problems to be investigated, but also when the researcher wants to learn more about the respondents. The interview technique in this study was conducted directly with Amsyan Syaryadi, the Secretary of Tapus Village.
3. Literature Review  
In this literature review, the researcher collected data and information from various sources, including books, journals, articles, and previous research, as references in this study.

### 3.2. Data source

In this study, the author used two data sources: primary data and secondary data. The following is an explanation:

1. Primary Data  
Primary data sources are data collected directly by researchers or individuals for a specific purpose. This data is original and has not been previously published.
2. Secondary Data  
Secondary data is information or data that has been collected, processed, and published by another party, not the researcher themselves. This data is typically used to support research, analysis, or decision-making. Secondary data can come from various sources, such as research reports, official statistics, books, articles, and other pre-existing documents.

## 4. Design of Proposed System Procedures

The system procedure design proposed by this researcher is based on the analysis conducted. Based on this analysis, the following system design can be proposed, which is expected to provide a solution to the existing problem analysis.

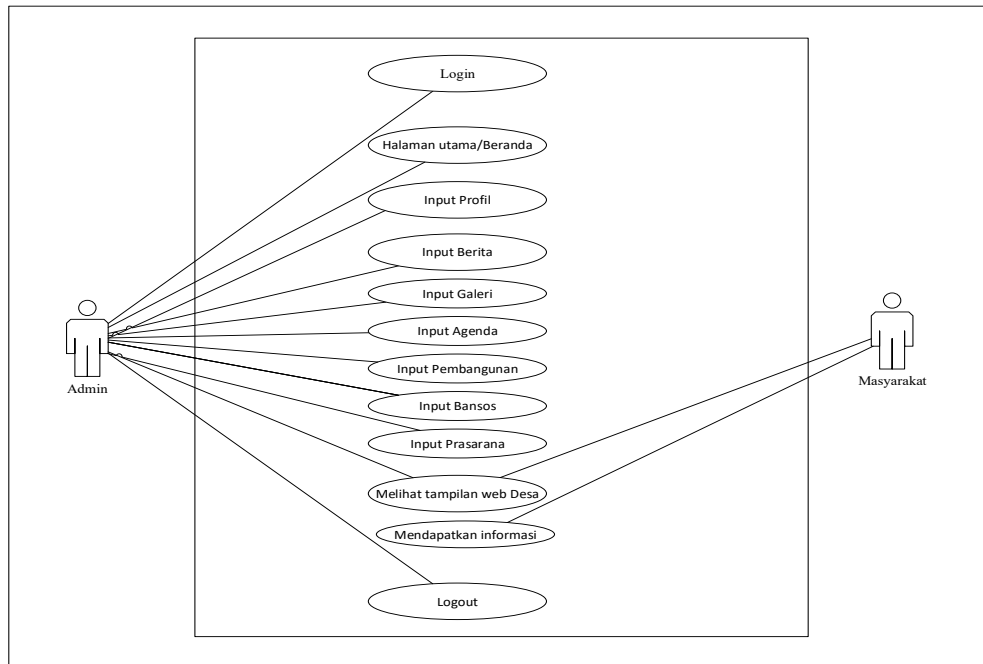


Fig. 1 : Proposed Use Case Diagram

The use case diagram process above describes the actor's activities in the village information system, which includes logging in, the main page/homepage, inputting all data, displaying data on the web page, and obtaining information.

## 5. System Implementation and Testing

### 5.1. Interface Implementation

Interface implementation is the final appearance of the developed software system. The following is a display of the interface implementation:



Fig. 2 : Web Front View Page

Figure 2 shows the homepage, the initial display of the site, which is part of the front-end. Its function is to welcome visitors, provide an overview of the website's contents, and direct them to other pages.

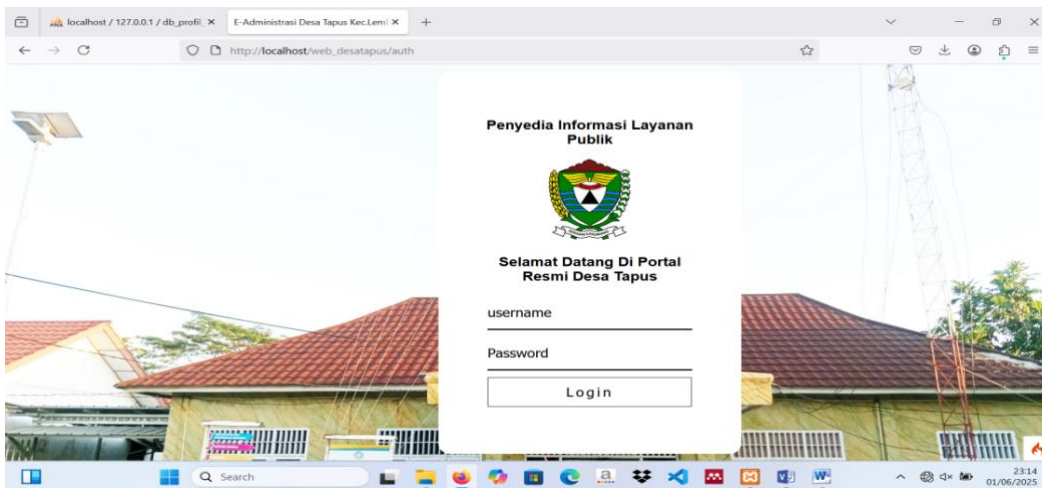


Fig. 3 : Login Display Page

Figure 3 shows that this login display is created to enter the main menu page of the website, by entering the username and password then clicking login, if correct you will enter the main menu page.

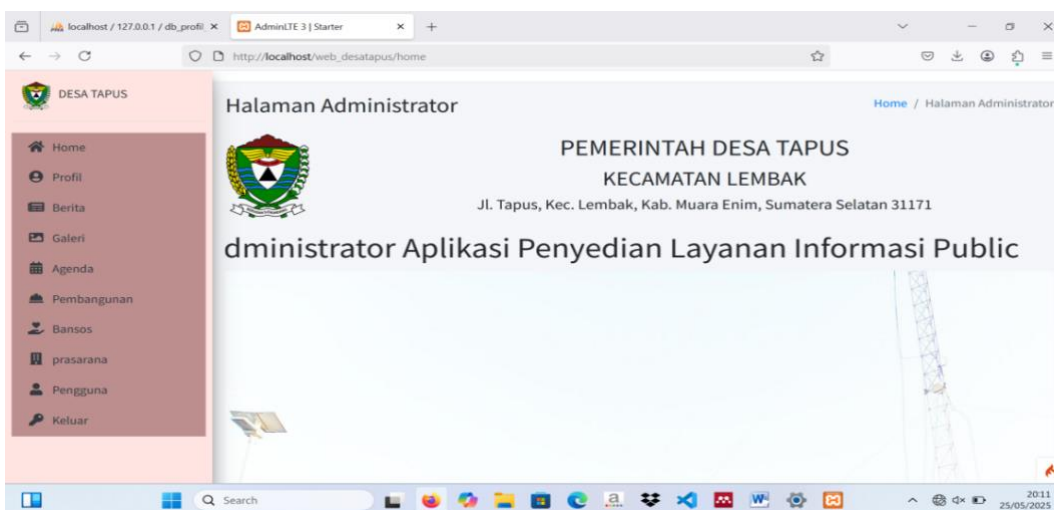


Fig. 4 : Home View Page

Figure 4 shows that the main page or homepage displays the entire menu, including home, profile, news, gallery, agenda, development, social assistance, infrastructure, users, and exit.

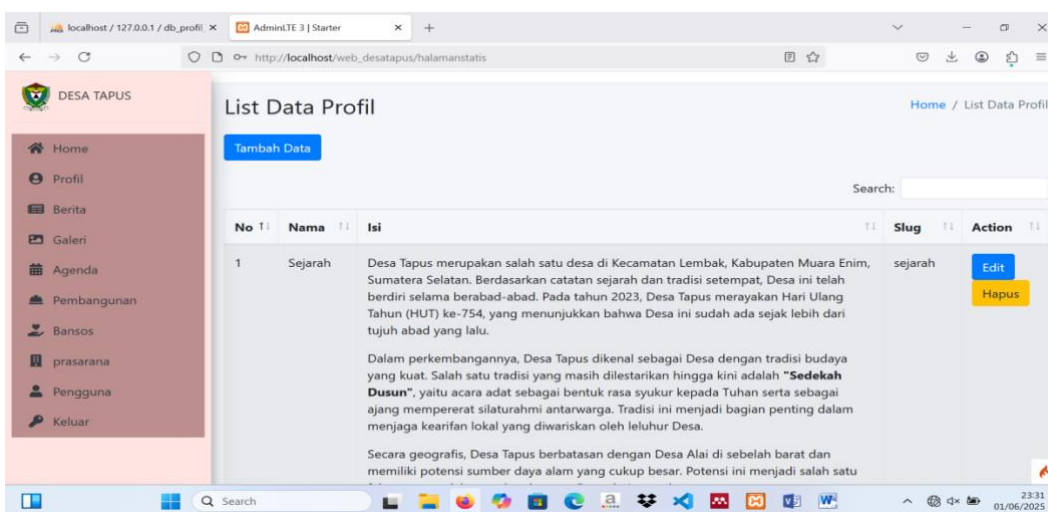


Fig. 5 : Profile View Page

Figure 5 shows that the profile page functions to provide a general overview of the village to website visitors.

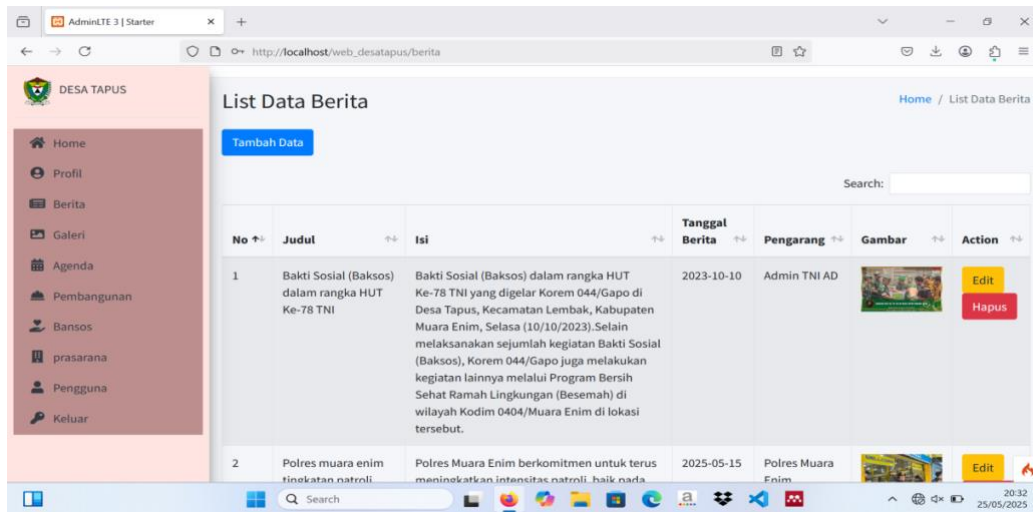


Fig. 6 : News View Page

Figure 6 shows that the news page functions to provide the latest information to residents or website visitors. The aim is so that residents know what is happening in the village and do not miss out on information.

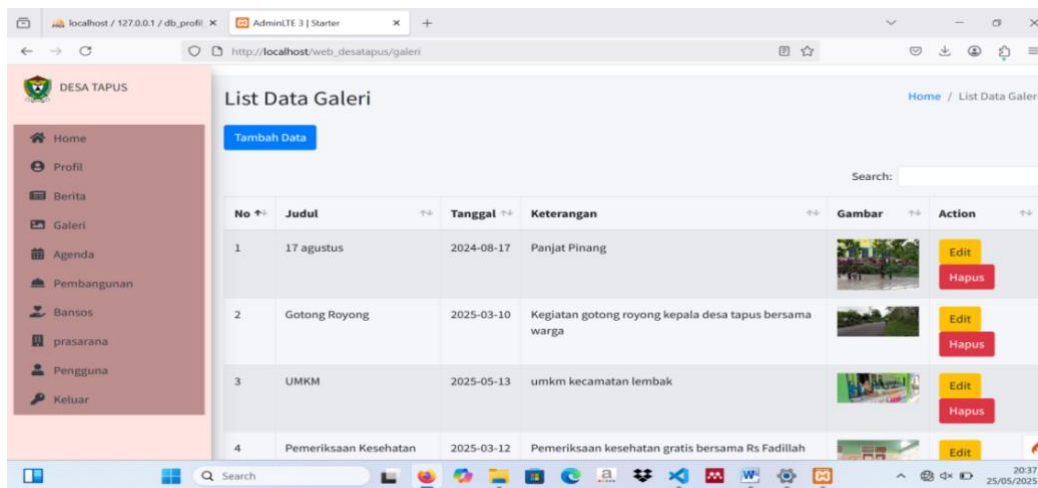


Fig. 7 : Gallery View Page

Figure 7 shows a gallery page containing a collection of photos showing activities or conditions in the village. The aim is so that people can see directly the atmosphere and activities in the village.

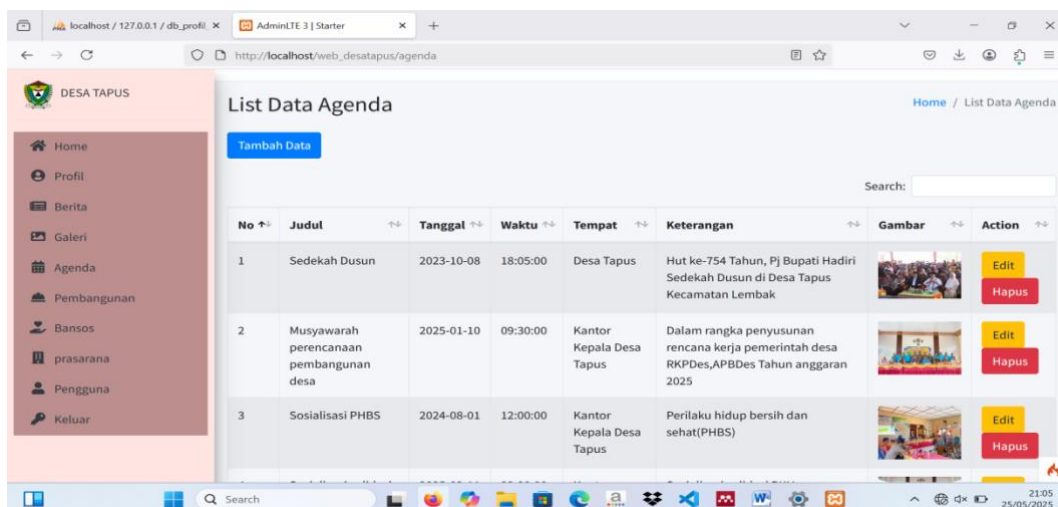


Fig. 8 : Agenda View Page

Figure 8 shows the Village Agenda Page containing a schedule of activities or plans for events that will be held in the Village. The aim is for residents to know and participate in Village activities.

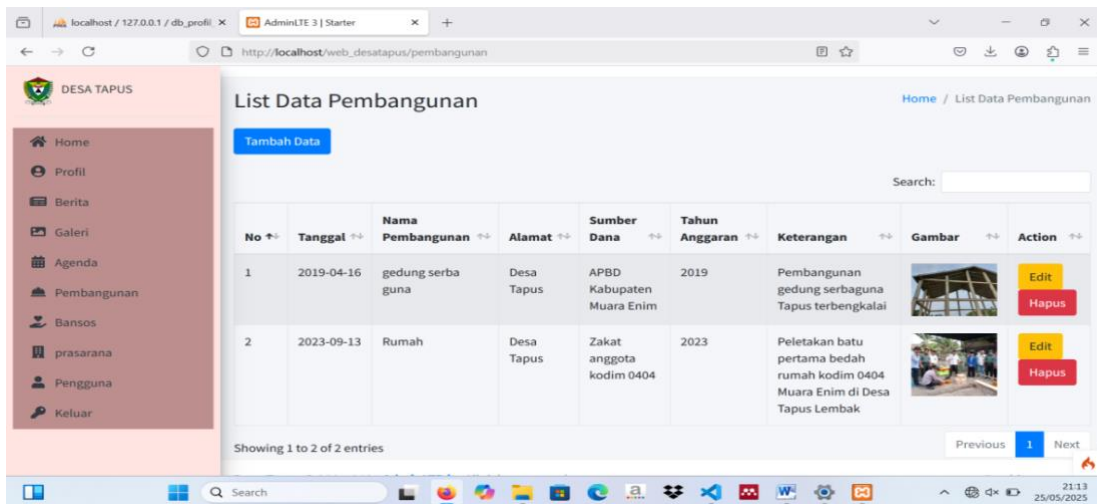


Fig. 9 : Development View Page

Figure 9 shows the Development Page which functions to display information about development projects carried out in the Village.

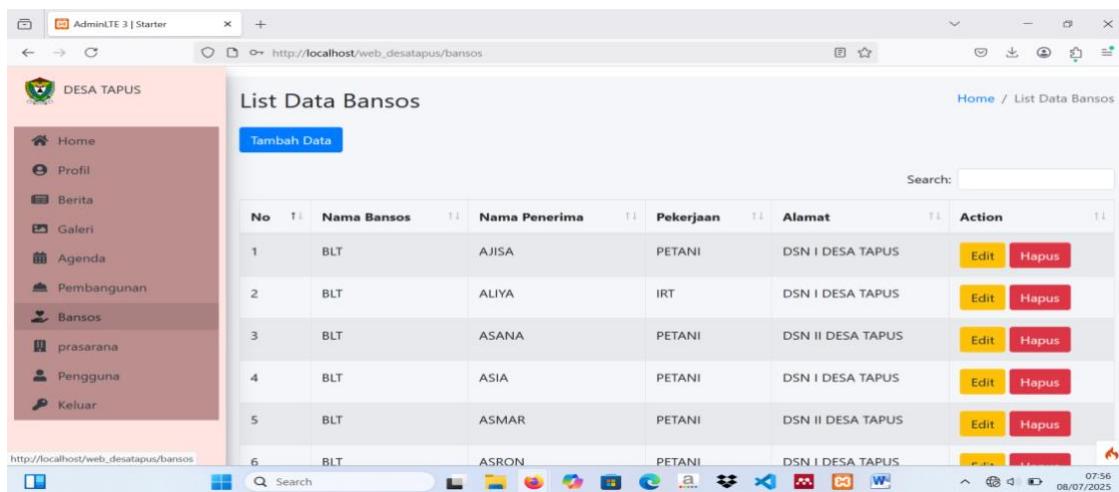


Fig. 10 : Social Assistance Display Page

Figure 10 shows the social assistance page which functions to convey information about the distribution of assistance to village residents. The aim is to provide clear and transparent information about social assistance, and to avoid confusion or suspicion.

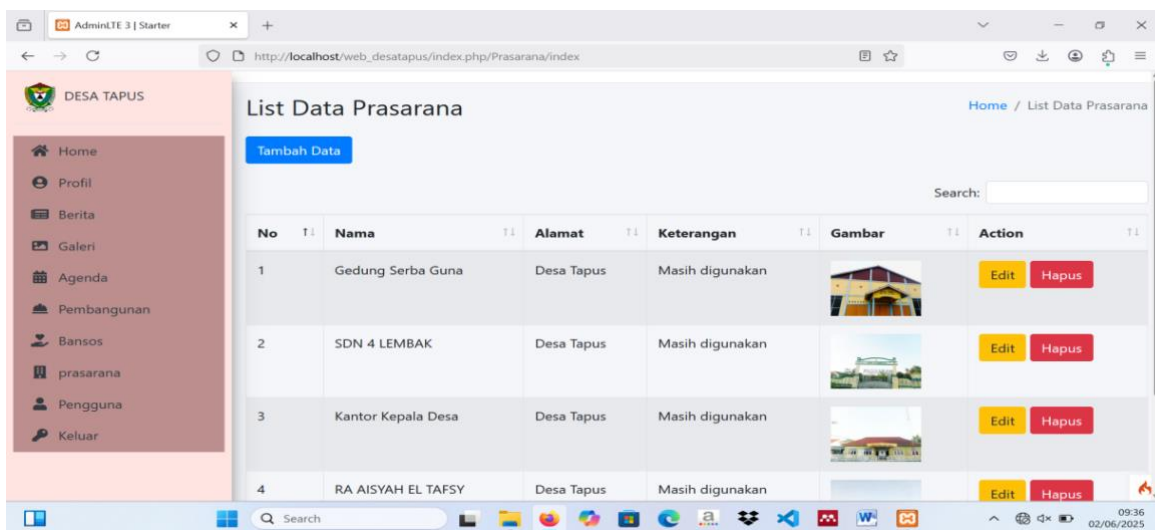


Fig. 11 : Infrastructure View Page

Figure 11 shows the infrastructure page which functions to provide information about the physical facilities owned by the village.

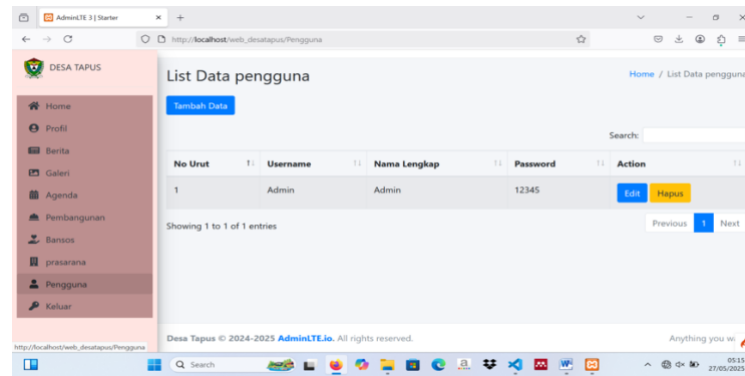


Fig. 12 : User view page

Figure 12 shows that this user page can only be accessed by admins or village officials, its function is to manage all website contents and village data.

## 5.2. Software Testing

The system testing phase focuses on logic and functionality, ensuring all systems have been tested. This is done to minimize errors and ensure the output meets the desired requirements. In this study, software testing will utilize a black box, and all items will be declared valid.

## 6. Conclusion

Based on the research results, it can be concluded that:

1. The village website facilitates information dissemination. Before the website, Tapus Village relied solely on bulletin boards and WhatsApp groups. This method was ineffective because information was not stored neatly, and not all residents received the same information.
2. With the website, information is disseminated more quickly and clearly. The public can access information at any time.
3. The method used to compile this thesis is descriptive with a qualitative approach, namely comprehensive, broad, and in-depth descriptions, and information data is presented in verbal sentences, not symbols or numbers.
4. The Agile method facilitates development; the website creation process is carried out in stages and tailored to the village's needs, resulting in more targeted results.
5. The village information system uses the PHP programming language to help the community access information easily.
6. The database can help improve data management and provide accurate information to the public.
7. The website supports information transparency, enabling the village government to convey information more transparently, and allowing residents to more easily learn about village activities and services.

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