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Submission System for Uninhabitable Houses of The Housing and Settlement Area Office

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Abstract

The swift progression of information technology has profoundly influenced diverse sectors such as government, private enterprises, and education. This research delves into the utilization of information technology within the housing sector, pinpointing the issues of inefficiency inherent in the conventional method of requesting uninhabitable homes in Aceh Tengah, Indonesia.The existing manual system employed by the Aceh Tengah Housing and Settlement Agency frequently leads to delays, loss of data, and inefficiencies. To address these shortcomings, this study suggests the creation of an online system that enhances the efficiency of the submission process. The goals of this study involve the digitization of the request submission process for uninhabitable residences, thereby increasing convenience for residents, Centralizing data storage to enhance data reliability and diminish the likelihood of loss or damage, and Improving both the accuracy and efficiency of data reporting and analysis. Through the introduction of an online platform, the Aceh Tengah Housing and Settlement Agency seeks to offer a service that is more efficient, transparent, and responsive to its residents, with the ultimate aim of enhancing the quality of housing and living conditions within the area.

Keywords: *Digital technology, online platform, residential housing, Aceh Tengah, governmental efficiency* **.**

1. Introduction

The issue of adequate housing is an important issue faced by many, especially for disadvantaged individuals. In Indonesia, the government through relevant agencies, one of which is the Housing and Settlement Area Agency, is trying to solve this problem by offering various support programs [1]. One initiative that often gets attention is the renovation program for houses that do not meet the occupancy requirements. To improve efficiency and effectiveness in the process of applying for assistance to renovate uninhabitable houses, an integrated system that is easily accessible by the community is needed [2].

The rapid development of information technology has transformed the way we live and work. The most significantly affected sector is the public service sector [3]. In the realm of public services related to housing, the use of information technology can facilitate public access to services provided by the government. The application system for uninhabitable houses based on information technology is the right solution to overcome the problems that often arise in the manual application process [4].

The application procedure for repairing uninhabitable houses often faces various obstacles, such as long-winded bureaucracy, complicated requirements, and lack of transparency [5]. This causes many residents to experience difficulties in obtaining the assistance they need. To solve this problem, a simpler, clearer, and more efficient mechanism is needed. An online-based application system for uninhabitable houses is expected to be an effective solution [6]. With regard to the title of this research, data collection has given rise to several issues and modes and parts of the world, but some limitations affect the effectiveness of these systems.

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Limited Resources: Few manpower resources as well as financial resources are a burden in the implementation of the damaged house repair program. Where limitations in manpower and financial resources are one of the main problems, this causes difficulties in the collection of information and the implementation of the improvement program of unfit housing.

Accessibility: Widespread shortages especially in remote areas have become an obstacle to the accessibility of project applications and approvals. This creates a gap in the reach of the population in need of assistance and the provision available to them in the community.

Data Quality: Data collection activities are usually not done accurately as field personnel are poorly trained and even when they have the skills, testimonies from measured project areas lack tools. This negatively impacts the decisions taken based on this data.

Formulation of Integrated Area Housing Policy: The Office of Public Works and Housing has attempted to create an information system that is quick and easy to apply for and realize monitoring of the status of uninhabitable houses. This is aimed at increasing the effectiveness of transparency and efficiency of submitting application forms.

2. Research Methodology

In the course of research, the data collection methods employed by the researchers were both systematic and thorough, focusing on two primary techniques: observation and interviews.

During the observation phase, researchers meticulously recorded all pertinent information encountered in the field. This involved taking detailed notes on various aspects of the environment, including the processes at play, interactions among stakeholders, and any emerging issues that arose. The aim was to capture a comprehensive view of the situation, ensuring that all significant details were documented for further analysis.

In addition to observation, the researchers conducted in-depth interviews in a structured format. These interviews involved key informants, such as the Head of the Central Aceh District Housing and Settlement Office and District Officers responsible for implementing the Uninhabitable House program. The structured nature of these interviews allowed for focused discussions, enabling researchers to gather valuable insights directly from those involved in the program's execution. This combination of observational data and firsthand accounts provided a rich foundation for understanding the complexities surrounding the Uninhabitable House initiative.

Through these methods, the researchers aimed to create a well-rounded perspective on the challenges and dynamics of housing issues within the district, ultimately contributing to more effective solutions [8].

2.1. Analysis and Design of the Resulting System

User authentication is a prerequisite for accessing this application and is an important element in maintaining basic security in web-based information systems. [9]. To protect the system from parties with bad intentions, we recommend that after completing all activities, users must secure the data that has been entered into this system by clicking the Logout menu, then the system will redirect back to the public home page and all existing data will not be changed by anyone.

Based on the analysis of the current system, it can be concluded that the problem identified at the beginning does occur, namely that citizens have difficulty in submitting reports because they have to come directly to the Office first to make a submission [10]. This situation will take time, while residents have other activities in their daily lives.

2.2. Non-Functional Requirements Analysis

The Uninhabitable House Application System Requirement Specification outlines the hardware, software, and internet connectivity required to effectively operate this application.

For starters, the hardware required to run this application includes a personal computer, monitor, and tablet or smartphone. While a printer is optional, it can enhance the functionality for document handling.

Software-wise, this app requires a specific operating system to function on various devices. For personal computers, the app supports Microsoft Windows XP, 7, 8, or 10. Tablets and smartphones need to operate on Android, while Apple devices such as MacBook, iPad, and iPhone require MacOS. Additionally, Windows-based tablets and smartphones require the Windows Phone operating system. A PDF printer, which can be downloaded for free from the internet, is also required for document management.

An important component of the system is a reliable internet connection. The internet serves as a global network that connects computers around the world, enabling communication and information exchange. It operates using the Transmission Control Protocol/Internet Protocol (TCP/IP) standard. Users can obtain an internet connection by purchasing data quota or subscribing to an Internet Service Provider (ISP), with higher costs usually correlating with better reliability. Several types of internet services are available:

a) Cellular connections, which use GSM or CDMA radio frequencies. Examples are service providers such as Telkomsel and Indosat;
b) Fixed connection, which can be further categorized into;
c) Home Phone Cable Network (fixed line) services such as Telkom Speedy;
d) Fiber Optic Cable Network services, such as Biznet and Firstmedia.

3. Results and Discussion

This flowchart explains the sequence of steps from the initial stage to the final stage in the process of applying for an ineligible house [13]. The process starts with a submission from the applicant and goes through various stages such as verification, examination, assessment, until the final decision [14]. With this flowchart, the process can be well organized and make it easier to monitor and supervise each stage in the application.

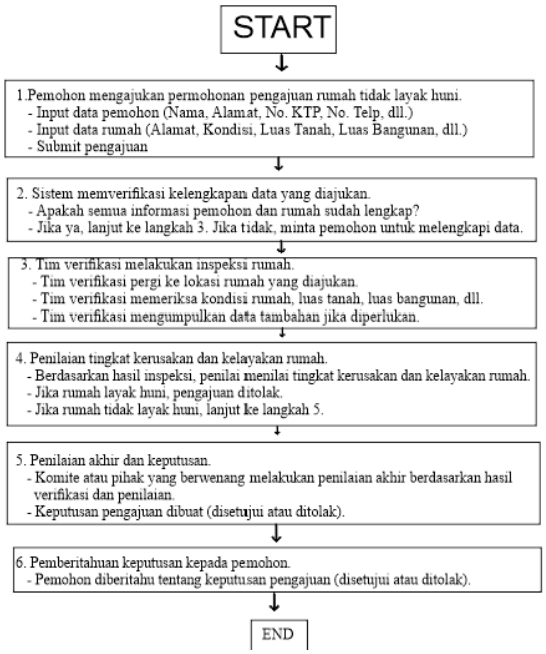

Figure 1. System Flowchart

3.1. Database Design

The Database Design for an ineligible housing application can be structured with several tables that include important data regarding the ineligible housing application [15]. The following is an example of a possible structure to consider:

Table 1. Application Table

Application Table:
Application ID (Primary Key)
Name_Applicant
Address_Applicant
No_KTP
No_Telephone
Date_Application
Application Status

Table 2. House Information Table

House Information Table:
ID_House (Primary Key)
Address_House
House condition
Land Area
Area_Building
Facility
Year of construction

Table 3. Damage Details Table

Damage Details Table:
ID_Assessment (Primary Key)
Application ID (Foreign Key to Application Table)
House ID (Foreign Key to House Information Table)
Assessment_Condition_House
Appropriateness Assessment
Comments

In this design, the Application table stores information about the applicant and the status of the application. The House Information table stores details about the proposed house, including its condition. The Damage Details table stores data about the damage experienced by the house. The Uninhabitable House Classification table is used to determine the level of damage and provide additional information. The Assessment table serves to record the evaluation of the application and the condition of the reported house. With this database structure, information related to applications for uninhabitable houses can be managed properly and support the decision-making process regarding the repair or replacement of the house in question. Black logs in uninhabitable housing applications refer to issues or challenges encountered in the application process that remain unresolved or pending. To address the black log in the application for uninhabitable housing, an evaluation of the updates in the application management system is necessary.

This information system is specifically designed based on demand to meet data and information needs. The system interface deals with the method of user interaction with software or hardware, and the implementation process includes various elements, such as design, development, and testing.

3.2. Login Page

The procedure to access this application for the public is to click on the Login option, then the system will show the following menu:

Figure 2. User Authentication Menu

1. Enter Username.
2. Enter the correct Captcha (Combination of Uppercase Letters and Numbers).
3. Enter Password with the correct password.
4. Click the Login button.

Administrative requirements

1. Land ownership status: The construction of a Rumah Layak Huni (RLH) is carried out on land that has a clear title status, where the prospective RLH recipient must have official documents proving land ownership.
2. The registration documents consist of:
   a. Application letter from the prospective RLH recipient.
   b. A stamped statement letter stating:
      1. Has never received RLH assistance in the form of money or goods sourced from APBN/APBA/APBK, from the receipt of zakat and infaq from the community, or from the private sector/corporate social responsibility (CSR);
      2. The land is owned and not inherited land that has not been distributed;
      3. The only house owned to be upgraded, or;
      4. Does not yet own a house; and
      5. Will inhabit the given RLH building by themselves.
   c. Identity data of prospective RLH recipients (photocopy of national ID card and family card)
   d. Photocopy of land title certificate/land tenure proof letter/land title certificate from the village head/lurah/keuchik.
   e. Photo of the house of the prospective RLH recipient.
   f. A certificate of incapacity or other relevant certificate approved by the kelurahan and kecamatan.

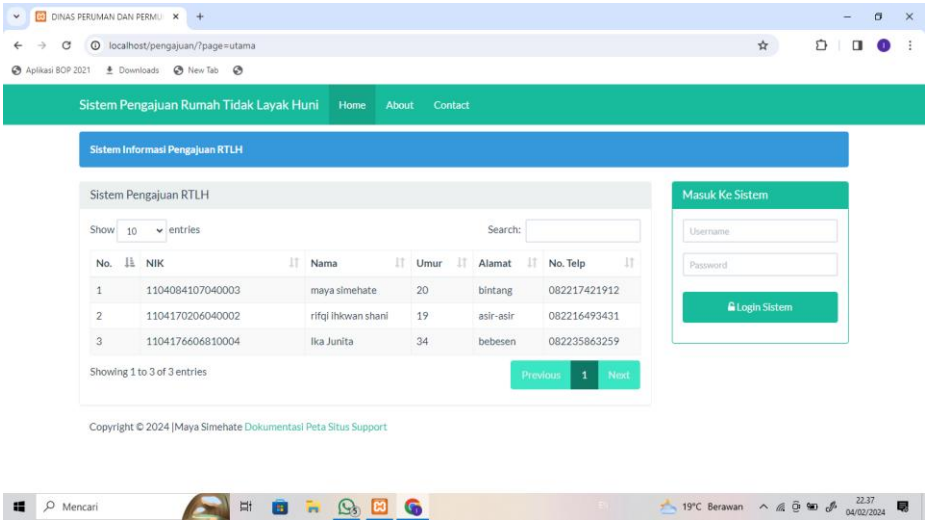

Figure 3. login to the system

To begin, we need to access the current website by entering a username and password.

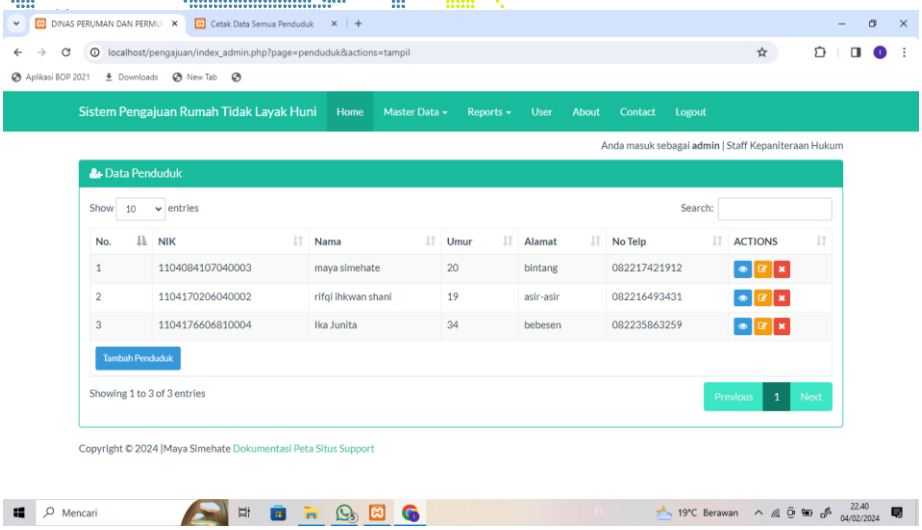

Figure 4. Community data entry

In the second stage, we have to input the resident information by completing the NIK, Name, Age, Address, and Phone Number.

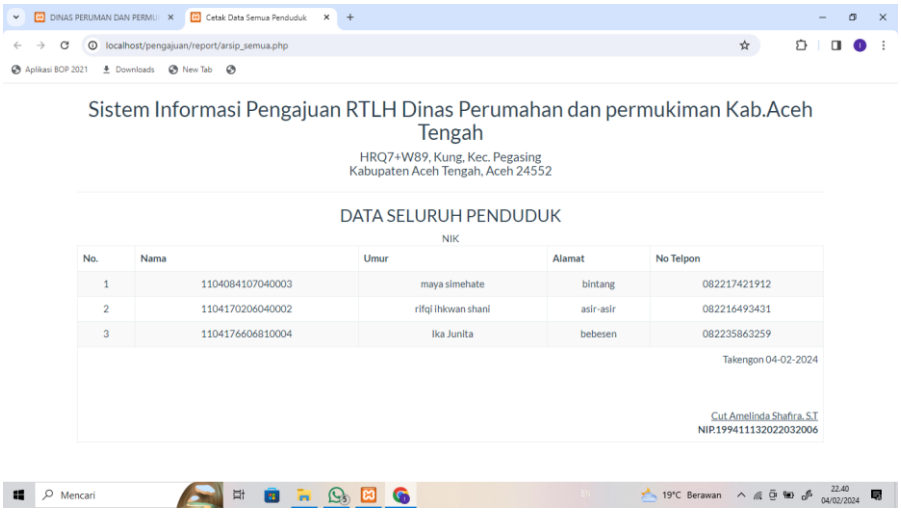

Figure 5. Community Data

Once filled in, we proceed to the printing process to be submitted to the head of department and signed.

3.3. Home Page

In the realm of information systems, especially web-based or software-based ones, pages play a very important function. In other words, a page can be understood as a stand-alone display element in an application. Each page is designed with a specific purpose and presents users with specific information or features.

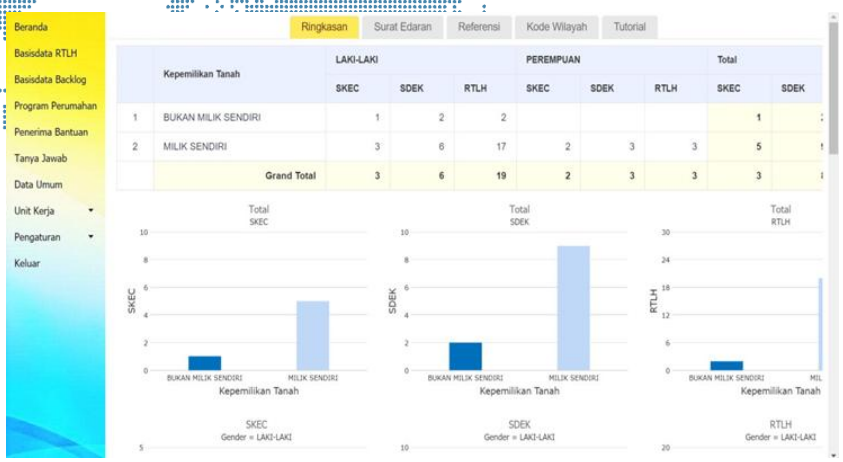

Figure 6. Home Page

3.4. Data Form Page

1. Direct Data Addition

Enter the Database → RTLH Data Management menu, then the system will show the new menu.

a. Select the INPUT DATA menu, then the system will show a form to enter data as shown below:

Figure 7. Data Input Page

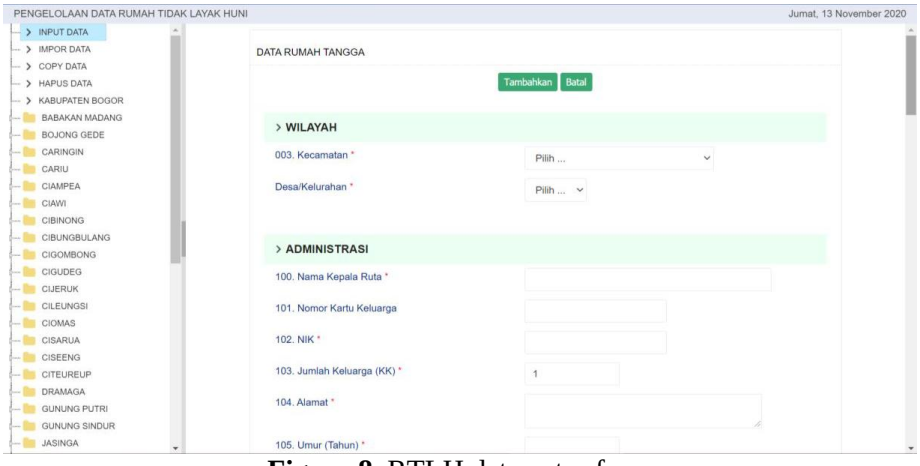

Figure 8. RTLH data entry form

b. Fill in each section of the form appropriately, and the sections marked with a red star ( ) are the required sections.

c. Once all sections are filled in, press the Add button to save the information.

d. Or press the Cancel button to cancel the process of adding information.

2. Information

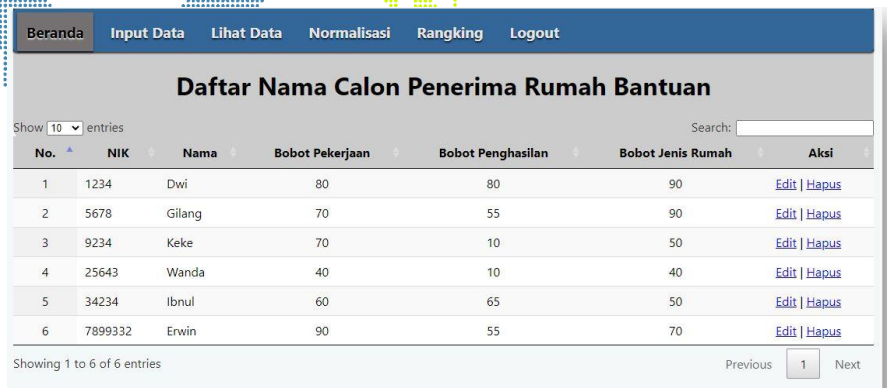

Figure 9. Data

Figure 10. New Data

a) Press the New Data button.
b) Complete the Head of Household Name to Number of Family Members fields. Tap the Check icon to save the information.
c) Tap the Back button to return to the previous page.

3.5. Nomalization Page

Normalization is a method in database design that is applied to structure data in a database so as to minimize redundancies and dependencies. This process includes breaking down large tables into smaller, more specific tables and establishing connections between them.

Figure 11. Normalization

3.6. Recipient Ranking Page

The recipient hierarchy page serves as an important element in various applications, especially those that require sending messages to multiple recipients. The main purpose of this page is to sort and organize recipients according to different standards to improve delivery and interaction.

Figure 12. Ranking of recipients

4. Conclusion

The system described earlier is a concise system for applying for housing assistance or uninhabitable houses. We designed this system to make it easier for staff or employees of Perkim to process information about who are residents or communities who need housing assistance, as well as their location. The system is also designed to save time in the application process by the community. With this online system, it is expected to expedite the submission and proper construction program of livable houses in Central Aceh. In addition, through this system, the government and related agencies will find it easier to collect community data. The data will serve to formulate policies, programs, and activities in the development of livable houses for the local government of Central Aceh District or related agencies.

This research seeks to assess the performance of the Uninhabitable House Submission System in the Housing and Settlement Office. It was established that in general the submission system operates efficiently. Nonetheless, there are a few challenges that need to be addressed, particularly with regard to the speed and precision of data processing. Also, it implementation is hampered by the fact that some regions still use manual operations. This results in delays in the delivery of assistance to the people who are most affected. In view of these conclusions, training for the field officers in charge of the application system should be emphasized more. Furthermore, the capacity for data processing and management should also be improved through increased technological investment. More attention should also be given to communication with the public through appropriate and regularly updated information about the assistance application procedures and eligibility criteria. However, it should be noted that this study has some limitations, including enhancing the efficiency so that any operational costs incurred can be justified and improving the transparency of the application process.

As per this concept of having a more integrated system, it is anticipated that data may be managed more efficiently, thus making it possible to distribute assistance whenever and wherever it is needed by the people in question.

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