Implementation of e-Government as an Effort to Improve Website-Based Services in Ciherang Village

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Article	Abstract
Keywords: E-Government, Information Technology, Website, Ciherang Village. **Article History** Received: Jan 9, 2024; Reviewed: Feb 25, 2024; Accepted: Mar 14, 2024; Published: Mar 30, 2024.	Information and communication technology has become a very important need in people's lives, especially in terms of the implementation of public services. The government must be able to adapt to technological changes in order to provide more effective and efficient services to the community. Adequate information technology will provide benefits, especially in saving costs, time and effort. One of the efforts that the government can make is to implement E-Government. The method used in this study is a data collection method including observation, interviews and literature studies as well as for system development using the waterfall model. Based on the results of the research, a website was produced that helps the public access accurate and fast information. The Ciherang Village information system website is expected to help improve the accessibility, effectiveness and efficiency of public services in Ciherang Village.

INTRODUCTION

In today's digital era, information and communication technology has become a very important need in people's lives. Especially in terms of providing public services, the government must be able to adapt to technological changes to provide more effective and efficient services to the community. Information Technology in government is a new breakthrough in terms of government management and the dissemination of information to the public. It is hoped that the technology used by the government will make the government more transparent and help solve more complex tasks.[1] Adequate information technology will provide benefits, especially in saving costs, time and energy. One of the efforts that can be made by the government is to implement e-government so that the government can provide public services that are more accessible to the public. One of the government's responsibilities is to implement and utilize e-government in public services. In Indonesia, the implementation of e-government has been going well, but there needs to be improvement in terms of telecommunications infrastructure, governance, services, and human resources.[2] And until now, there are still many problems with public services in Indonesia, such as poor quality of service products, low access for marginalized people, and the absence of a service complaint mechanism.[3] In fact, by utilizing e-government, it can minimize the possibility of corrupt practices, so the better the implementation of e-government, the less likely it is for local governments to be involved in corruption. Open and honest public service information is easy to obtain, when local governments use E-Government, so that information asymmetry between agents and principals can be reduced.[4]

In article 86 paragraph 2 of the Village Law, it reads "The Government and Regional Governments are obliged to develop the Village Information System and the development of Rural Areas'. The implementation of e-government is the use of information technology, Permendesa PDTT 11 of 2019 concerning the Priority Use of Village Funds in 2020 among the activities are basic social services as referred to in Article 6 paragraph (1) including: procurement, development, development, and maintenance of basic facilities and infrastructure to meet needs: residential environment, transportation, energy, information and social communication.[5] Since the enactment of Presidential Instruction No. 3 of 2003 concerning e-government development policies and strategies, the government is required to be able to take advantage of advances in information and communication technology through the development of e-government-based public services.[6]

Realizing that Indonesia is still classified as a developing country, the real implementation of the implementation of e-government is still experiencing various kinds of obstacles, especially in remote villages. Normative legal research found that the development of the e-government system in Indonesia in quantity has begun to increase but in quality is still inadequate because the implementation of e-government has not been evenly distributed in all regions and still functions as a provider of static information.[7] Considering that the implementation of e-government requires various kinds of preparations such as large costs, quality human resources, clear work programs and what is dizzy is an effective socialization to invite community involvement in supporting the operation of government performance programs as an effort to improve the quality of village services.

In previous studies related to the implementation of e-government, there are several different findings. Namely different places and times, information systems that already exist but are not effective and efficient and different research methods and people who are not used to accessing information on the internet. In villages, the implementation of e-government can help the government to provide better public services through village websites. This village website can provide information about government programs and activities, as well as provide access to the community to submit applications or complaints online.

Based on the above problems, the village government should have created a village information system, while Ciherang village itself does not have an official village information system, therefore efforts are needed to create a village information system or official website of Ciherang village as a means of information that can be accessed by the people of Ciherang village. In this context, improving website-based services in villages is an important effort that can increase community participation in government and provide ease of access to public services. Therefore, it is important for the village government to improve information and communication technology capabilities and encourage community participation in the use of public services based on village websites.

Ciherang Village is a village located in Gunung Alip sub-district, Tanggamus regency which will later be the focus of this research. From these problems, this research will be carried out an appropriate analysis to see the implementation of e-government in the Ciherang Village government. This research is expected to provide a real picture of the potential, obstacles, and impacts of the use of digital technology at the village level and become a recommendation for the development of information technology-based public service systems in rural areas.

METHOD
2.1 Data Collection Methods
In this study, the author uses several data collection methods to obtain the information needed to design software to suit the problems faced by the village government. Data collection is carried out by several methods such as observation, interviews and *literature study*.
a. Observation

Observation is carried out directly by conducting direct observations at the location to obtain the necessary data. The author made direct observations to the Ciherang Pekon Center, Gunung Alip District, Tanggamus Regency about the data needed by the researcher such as the problems that must be overcome.

b. Interview
The interview was conducted by holding a Q&A to the head of pekon and existing staff about the problems that exist in the village, the history of the village, the vision and mission, population data and others

c. Literature studies
In this method, data collection techniques are obtained based on journals, articles, and other reliable data sources. The author collects data in the form of theories that aim to support the research process.

2.2 System Development Methods

In this study, the development of the system used the Waterfall model. This model is an approach to systematic software development. With several stages, namely, *Requirement system analysis*, Design, *Implementation, Testing, Maintenance* As the name of the waterfall, the stages in this model are carried out sequentially, as the name suggests. In addition, we can return to one stage. Software that will be used over a long period of time usually uses this model. The stages can be seen as in the following picture:
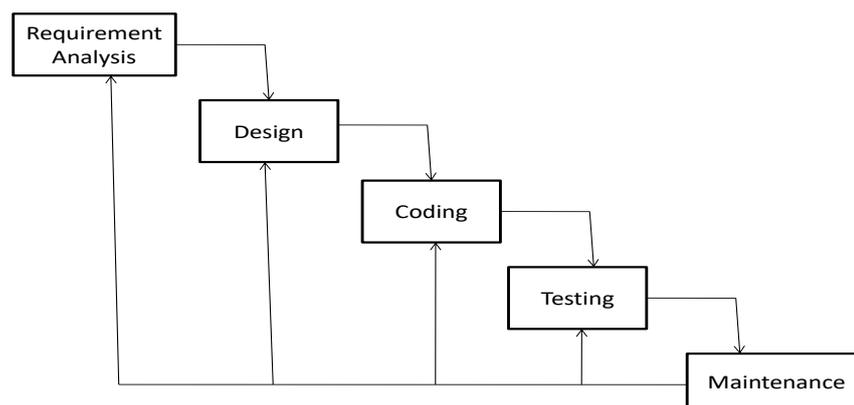

Figure 1 Waterfall model

Phases in the Waterfall Model:

a. Requirements/Analysis
This phase should achieve all the software needs, including the user's expected usability and software limitations. To get this information, people usually conduct interviews, surveys, or discussions. This data is then analyzed to produce the necessary documentation for use at a later stage.

b. Design
The purpose of this stage, which is done before coding, is to give you an idea of what it should be done and how it will look. This stage helps in evaluating system and hardware requirements and determining the overall system architecture.

c. Coding
In this phase, programming is carried out, which means that the creation of the application program is divided into small modules that will be combined in the next stage. In addition, the modules created are also checked to ensure that they have performed the desired functions

d. Testing

In this phase, the modules that have been created are combined and tested to determine whether the software is designed to meet the requirements of the design and whether there are still errors.

e. Maintenance

This is the final phase of the waterfall model, where the software is ready to be used and maintained. Fixing errors that weren't found in the previous step is part of maintenance. There is a new need to improve the implementation of system units and system services.

RESULTS AND DISCUSSION

3.1 System Design

a. Structured Diagrams

1. Context Diagram

A context diagram is the highest type of DFD (Data Flow Diagram) that describes all the inputs and outputs of the system, and consists of a process.
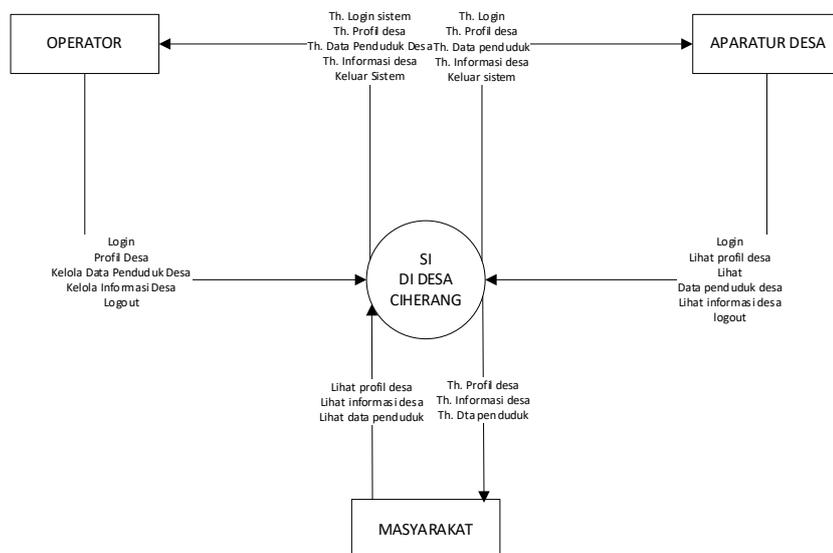

Figure 2 Context Diagram

In the context diagram of the Ciherang village information system, there are information, namely:

a) Operator

The operator is a person who is responsible for managing data on the system, whether it is adding data, deleting data, and editing data on the system.

b) Apparatus

Village officials are people who are allowed to see all the data on the system.

c) Community

Visitors are people who see the Ciherang village website.

2. Data Flow Diagram

A Data Flow Diagram (DFD) is a diagram that describes the data flow of a process or information system. In DFD, there is information related to the inputs and outputs of each of these processes.
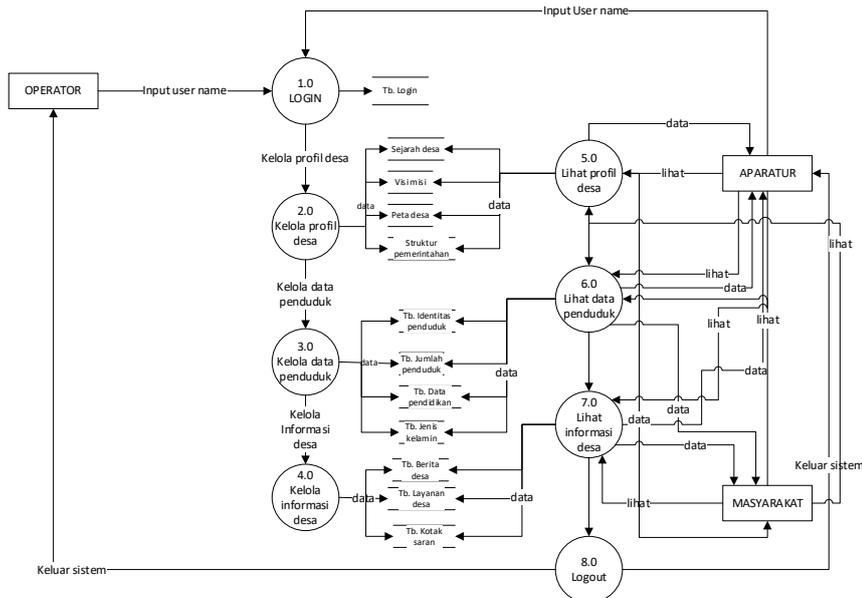
Figure 3. DFD level 0

The Data Flow Diagram Level 0 describes the overall process model of the system where the operator inputs data into the system and then the system will process the data and produce the required information.
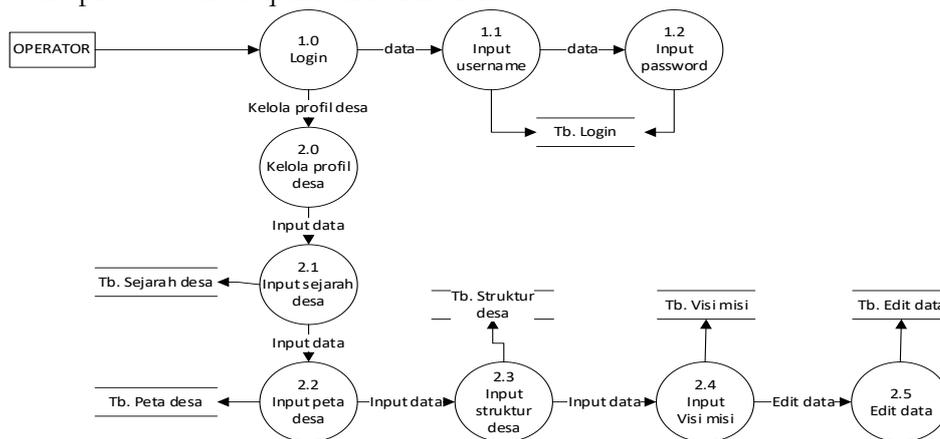

Figure 4 DFD Level 1 Process 1 and 2

Data Flow Diagram Level 1 Process 1 and 2 above is a process of managing village profiles, operators input village history data, village maps, government structures, vision and mission, and editing data into the system.
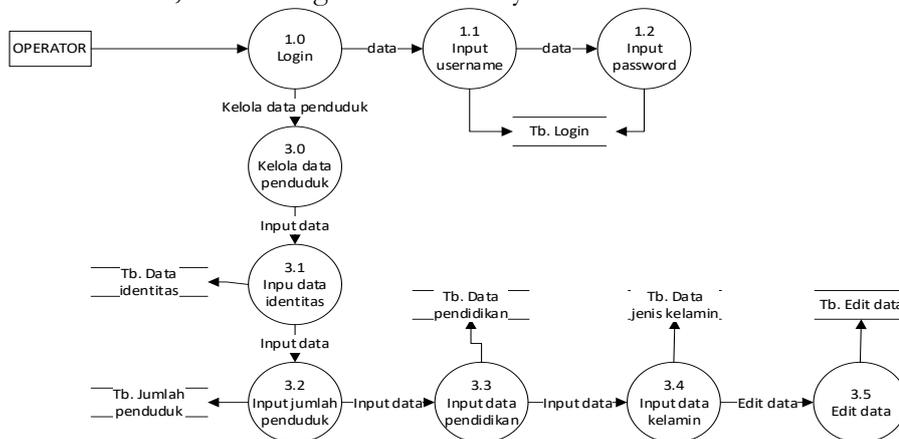

Figure 5 DFD Level 1 processes 1 and 3

In DFD level 1, processes 1 and 3 are the process of managing population data. Operators manage each of these processes which have different tables, from this process the public will get data information from each process.
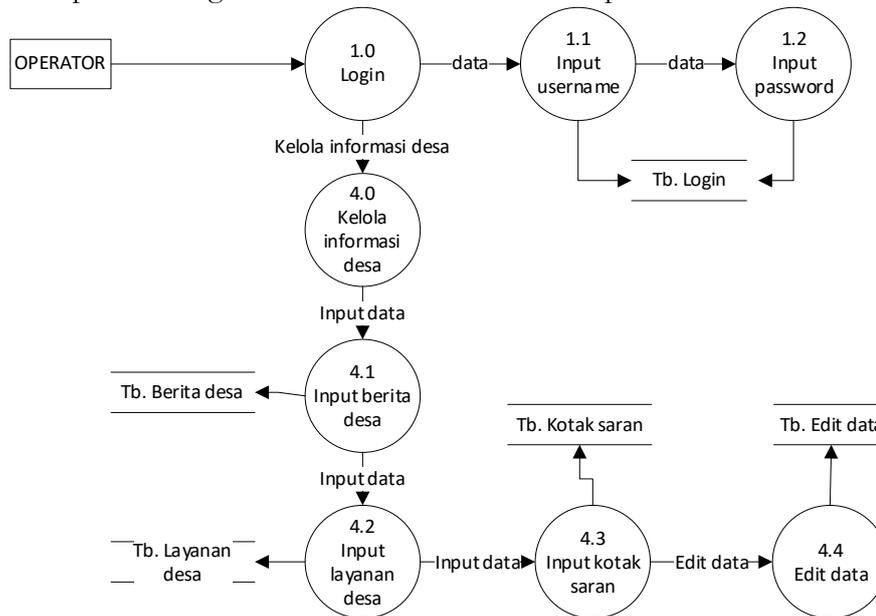

Figure 6 DFD Level 1 processes 1 and 4

In the Data Flow Diagram Level 1, process 4 above is a description of village information management, starting from village news inputs, village services, and contact suggestions, and data editing. The community will be able to see village information.

b. Entity relationship diagram (EDR)

Entity Relationship Diagram (ERD) is a diagram used to design a database, used to show the relationship or relationship between visible entities or objects and their attributes. The following is a picture of the ERD on the Ciherang village information system.
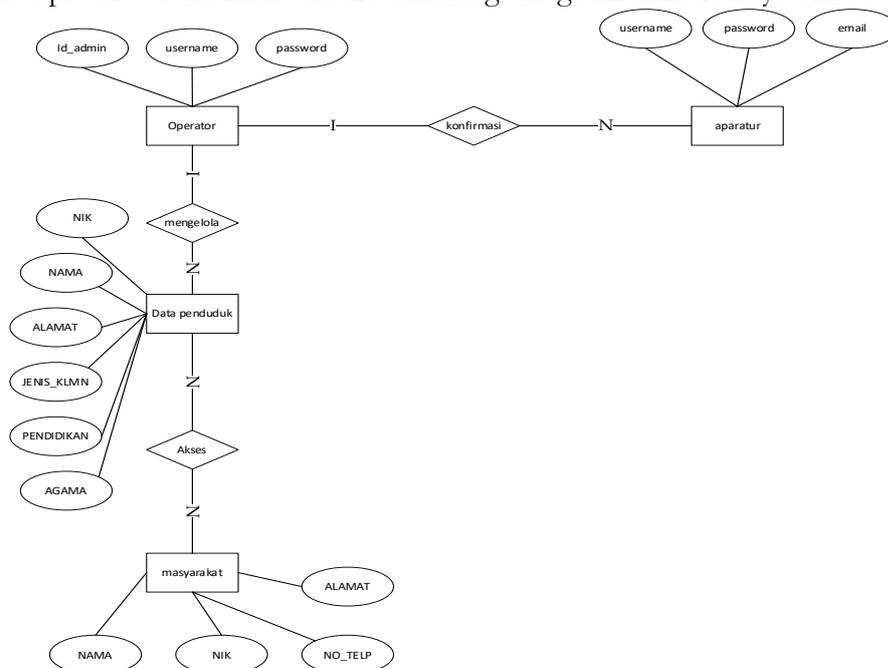

Figure 7 Entity relationship diagram

3.3 Implementation

Interface is a method used to interact or manage communication between humans as users and systems, which functions to display menus or features available on the website so that users can easily use the system.

a. Home Page Implementation

On the home page which has the following display:

Figure 8 Home page

On the main page display, there is a home menu, contacts, gallery information and profiles that can be accessed.

b. News Page

The appearance of the news page is as follows:

Figure 9 News page

The news page display contains news that can be accessed anytime and anywhere.

c. Service Page

The display of the service page is as follows:

Figure 10 Service page

On the service page there are several services such as making ID cards, family cards, and moving letters.

3.4 Analysis and Research Results

The system design method has been used to build a web-based e-government application. The results of the study show that web-based e-government applications can facilitate the work of village officials in administrative services and accurate community data recording. This application will be used by all villages and stored on one server, so that it will be easier to retrieve and report on population changes and mutations. Every data management has the ability to input and store data into the database, transform data, and transform data. This application is usually used by administrative service systems, providing the public with accurate and fast information.

CONCLUSION

Based on the results of the research on the Implementation of E-Government as an effort to improve website-based services in Ciherang Village, it can be concluded that this research has succeeded in building a government information system, namely a website-based e-government for Ciherang village. The website-based village information system is used to help solve the problem of village information delivery and utilize technology to help the government carry out a more efficient and effective data storage process for village activities and potentials and improve accessibility. Websites can be used for a long time if there is good data management. In addition, users, operators, and system builders perform maintenance and maintenance of the system to correct deficiencies. To convey data about village activities and potential, a web-based information system can be used. By adding more varied features, further research can be done.

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