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Improving the Community Services through Electronic Management of East Pringsewu Subdistrict Administration

[1]Tri Susilowati, [1]Sri Hartati, [1]Mardiyanto, [1]Bimo Bagus Prabowo,

[1]Program Study Informasi System, FTIKOM, Institut Bakti Nusantara, Lampung, Indonesia

[*]**Email:** trisusilowati423@gmail.com

Abstract

Every Government Institution cannot be separated from carrying out daily administrative activities. Manuscripts or recordings of documents or information, including text, images, and sound recordings, are called archives because archives are records of every activity carried out. Currently, the East Pringsewu sub-district office for filing letters and other activities still uses manual methods. The implementation of E-Government is expected to enable all service activities to the community to be carried out electronically, thereby simplifying policy and service functions. The data collection methods used in this writing are observation, documentation, interviews, and literature study. The SDLC (System Development Life Cycle) method is used in this research, namely a systematic approach to planning, designing, developing, testing, and maintaining software systems. Based on needs analysis, the system developed focuses on managing population data, archiving, and correspondence related to village authority. Before implementing the system, it is necessary to design the system. When designing a system, use the Unified Modeling Language (UML) approach using Use Case Diagrams, Activity Diagrams, and Class Diagrams. Use case diagrams to describe the interaction between users and the system being developed. This research uses the PHP programming language and Visual Studio Code as a text editor and MySQL DBMS. Applications can be used as a medium for implementing subdistrict or village development with information technology and supporting the progress of subdistricts or villages by Government recommendations in developing E-Government.

Keywords

Archives, E-Government, Village, Public services

Introduction

Making notes is a process that cannot be separated from carrying out daily administrative activities. Manuscripts or recordings of documents or information, including text, images, and sound recordings, are terms often used to describe these records. These documents are known as archives and are one of the components that facilitate administrative work related to archives. When it comes to sources of information, archives are very helpful in managing organizations or government institutions (Sulastri et al., 2021). All agency work is archived, such as submitting proposals, correspondence and other administrative documents. Because it is part of the public service, it must be managed well. Recorded information can be defined as evidence, notes or memories for the relevant institutions, one of which is correspondence.

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The development of e-government in Indonesia still faces many challenges and obstacles, especially due to a lack of supporting resources such as inadequate telecommunications infrastructure. It is hoped that with the implementation of e-government, policy and service functions will be simplified (Sri Hariyati et al., 2022).

Apart from not using an information system, filings are still stored in filing cabinets or other filing places. If there is only a small amount of data, manual filing can be used, but if the data is larger and more complex, it will be difficult to search the document if necessary. Staff limitations lead to long queues and slow service processes. Utilizing information and communication technology (ICT) to carry out government activities, enabling people to interact with each other, and encouraging public service providers to be more accountable and transparent (Londa et al., 2022).

Based on the results of the problems that have been explained, of course, there must be a solution to overcome problems in administrative management in the East Pringsewu sub-district, especially in archiving activities so that in the future they will be managed better because archives have a big meaning and role in an agency or institution. Every event that occurs can be recorded in the archive. Therefore, in this research, an E-Government system will be designed to manage public services to improve.

Methodology

1. Method of collecting data

To meet data needs, data collection methods are very important in research on application design and data collection strategies. In this paper, data was collected through the following methods:

a. Observation

Observation is a data collection method that not only measures respondents' attitudes; it also records information carried out by observing and recording observed phenomena. (Pratama & Marjun, 2022) Based on the theoretical explanation, the data collection method known as observation involves observing the entire process of observation activities. to get the information needed. Data collection on observations carried out by the author included East Pringsewu Village Staff to find out the method for making documents for filing letters in East Pringsewu Village.

b. Documentation

Documentation is just another term for written or visual analysis derived from a particular document. Direct data from the research site, such as books, regulations, activity reports, photos, documentary films and research data, is intended to be collected (Endra & Hadi, 2021). To get the data needed, the writer collected data from East Pringsewu Village staff.

c. Interview

In qualitative descriptive and quantitative descriptive research, interviews, also known as interviews, can be carried out verbally or in face-to-face meetings individually or in groups. Data and information collection is through the interview method with East Pringsewu Village staff.

d. Literature review

Literature Study activities collect data and information from various sources, such as books (with various theoretical studies), magazines, manuscripts, stories, historical documents, and research materials (Arianto, 2021). Apart from that, also on digital media such as news from radio, television and other electronic media. In this research, the author took information sources from previous research journals as a source for the research carried out.

2. System Development Methods

The SDLC (System Development Life Cycle) method is used in this research, namely a systematic approach to planning, designing, developing, testing and maintaining software systems (Syaputra Pagaralam College of Technology, 2021).

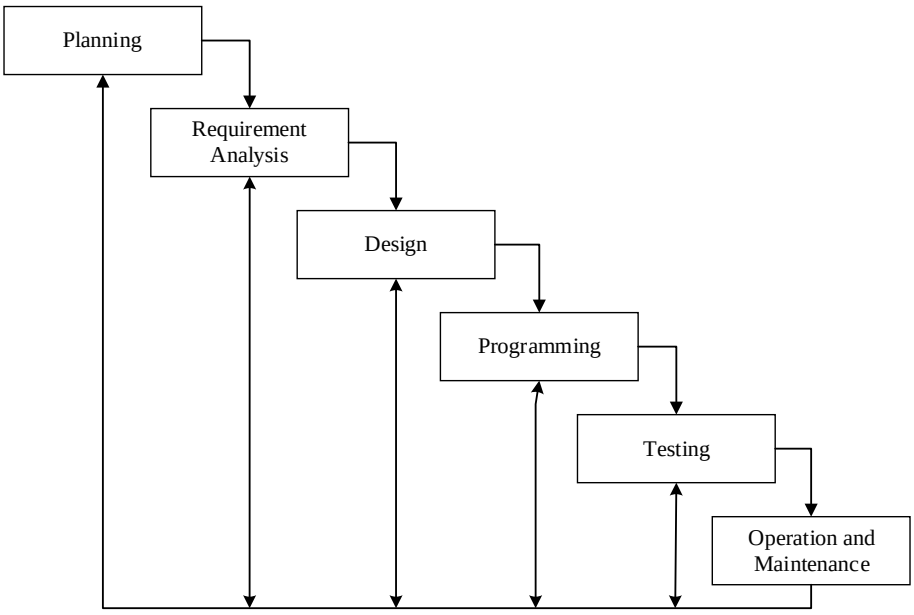

Figure 1. Waterfall Metode

a. Planning Stage

At the planning stage, several points need to be carefully considered when creating the Subdistrict Administration Management System application, as follows:

- Feasibility study: The feasibility study of the system to be created is based on technical feasibility, organizational feasibility and operational feasibility. This study examines how the system flow process works to determine whether to correct existing deficiencies or not.
- Scope, namely the scope that determines the scope to be formed, in this case the Village Administration Management Information System. (Case study: East Pringsewu Village)
- Database design, creating tables and data structures, and system appearance design are all part of developing this system.

b. Analysis Stage

At the analysis stage, the researcher analyzed how staff work in the East Pringsewu Village Administration unit, how to manage employee data, community data, correspondence and village archives. All analysis results will be recorded and used as a guide during the system design process.

c. Design Stage

During the design phase, based on the results of the analysis, the requirements are translated into functionality that the software can understand before programming. At this stage good documentation is needed. When designing a system, use the Unified Modeling Language (UML) approach using Use Case Diagrams, Activity Diagrams, and Class Diagrams (Pratama & Marjun, 2022).

d. Implementation

At the implementation or testing stage, researchers used the following system administrator software and hardware specifications:

1. *Software*
   Operating System : Windows 11 Pro
   Web Browser : Chrome
   Local Server : Xampp

2. *Hardware*
   Motherboard : Dell
   Processor : Intel(R) Core(TM) i510210U CPU @1.60GHz 2.11 GHz
   Hard Disk : 500 GB
   RAM : 8 GB
   VGA : Intel(R) UHD Graphics
   Keyboard : *Standart PS/2 Keyboard*
   Mouse : USB *Compatible Mouse*

3. Research Road Map

A research roadmap is a guide or plan of strategic steps designed to guide research and community service in an information systems degree program from planning to completion (Roadmap-Research-and-Community-Faculty-of-Science-and-Technology-UIN-Suska- Riau, n.d.).

In this research, we use fishbone diagram analysis as a quality improvement analysis tool to evaluate the causes (cause and effect relationships) of problems, and find the cause (root cause) of the symptoms that occur (Saputri et al., 2022).

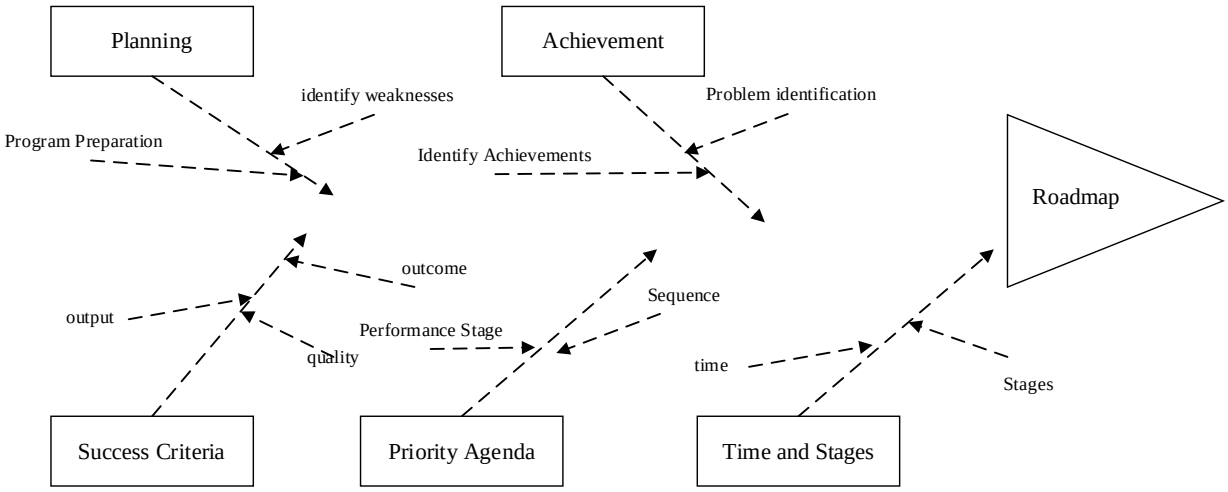

Figure 1. ***Fishbone Roadmap***

The explanation of the research roadmap is as follows:

1. Plan
   a. Identify Weaknesses; Follow up in observing weaknesses in previous developments, so that activities run well and in accordance with needs.
   b. Program Preparation Develop Standard Operational Procedures to suit needs. Develop Information Technology Governance in every activity planning so that every activity is well documented.
2. Success Criteria
   a. Output (Output); This document will be a reference in the form of a road map according to the agreed period, so that implementation is in accordance with needs and readiness.
   b. Results (Outcome); Will have an impact at every stage of implementation according to plan.
   c. Quality; According to the user's needs, they will get good services or products that can be used as a reference.
3. Achievement
   a. Identify Achievements; Related to the implementation of achieving the targets of these activities.
   b. Problem Identification; Can be used as a note as a source of problems that arise
4. Priority Agenda
   a. Work Phase; The initial activity in creating a research roadmap is to analyze the priority order of needs
   b. Sequence; Understanding the Priority Agenda both directly and indirectly, as well as creating user insight will get results in accordance with the agreement.
5. Time and Stages
   a. Time; Discussion of the development or implementation stage discussion
   b. Stages; The stages of the Research Roadmap produced over a short period of time include:
      1. Planning (Gathering various data and information related to research)
      2. Analysis (Understanding every data and information obtained)
      3. Design (System Design Stages, program flow, database design)

4. Programming (Implementing design results into programming language code)
5. Testing (Testing the results that have been created according to needs or needs improvement)
6. Maintenance (The system that has been produced needs to be monitored at all times)

Results and Discussion

The requirement analysis shows that the system being developed is a sub-district administration system in the form of E-Government which focuses on archiving, correspondence and population data related to village authority. In this context, it is necessary to integrate the population database with the filing and correspondence system to ensure the smooth running of the sub-district administration process in an efficient and structured manner. With this system, it is hoped that services to the public can be improved, information is more easily accessed, and administrative processes become more transparent and accountable.

System design is the first step. In the system design process, the Unified Modeling Language (UML) approach involves the use of Use Case Diagrams, Activity Diagrams, and Class Diagrams. By using the UML approach, system design can be carried out in a structured and detailed manner, making it easier to develop a system that meets user needs and predetermined specifications.

Use case diagrams show interactions between users and the system being developed, and activity diagrams show interactions between one or more users and the information system being created. Administrators, Village Heads, RT Heads, and the general public are the 4 (four) users of the system created. The use case diagram image can be seen in Figure 3.

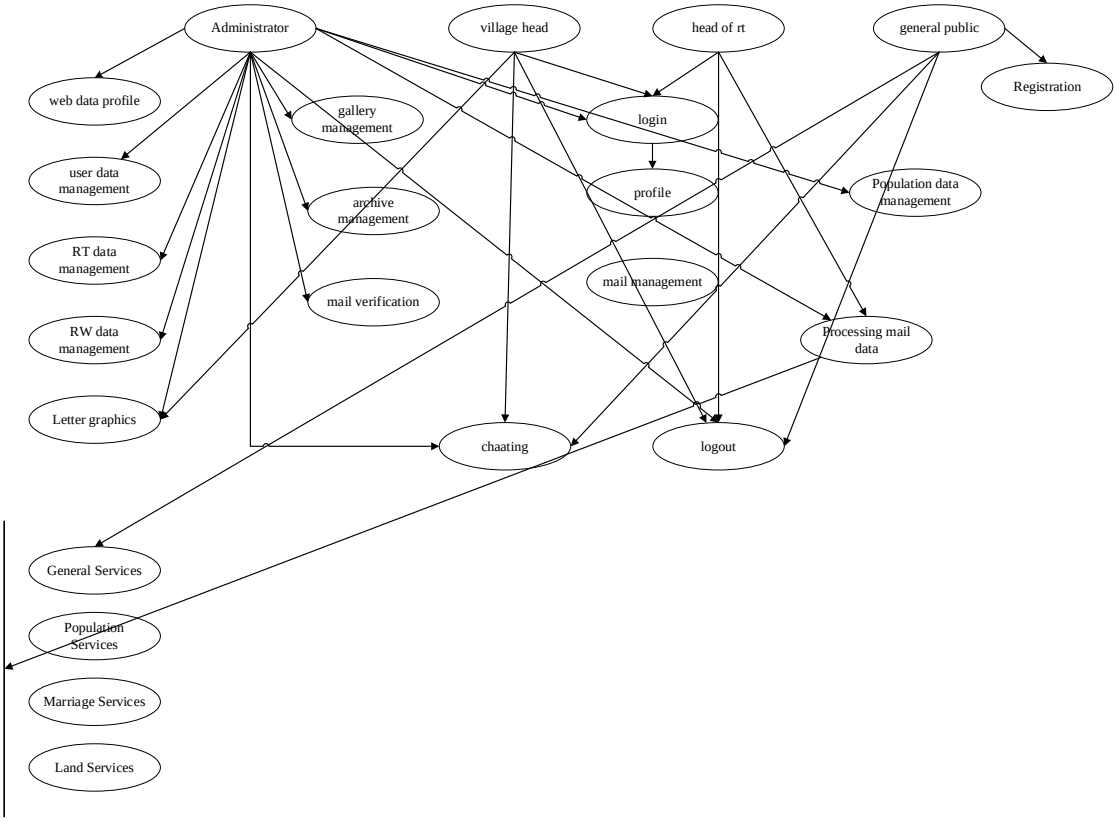

Figure 3. ***Use Case system***

Explanation of the menu that can be accessed by system users from the Use Case Diagram, as follows:

1. After completing the login process, administrators can access all menus in the application and have full rights to view, add, change and delete data in accordance with the approval of the Management.
2. After completing the login process, the village head can access the letter approval menu that has been validated by the administrator and see the letter graph that has been created so far.
3. After carrying out the login process, the RT head has access rights to manage population data within the scope of the RT and input correspondence data to help the residents' needs.
4. The general public, after completing the login process or after registering for those who do not have an account, will receive correspondence services from the sub-district according to the menu in the system. The public can view, add, change or delete application letters as long as they have not been validated by the administrator.

After creating a use case diagram, create an activity diagram to show the workflow and business system activities based on the distribution of users interacting with the system (Borman et al., 2020)

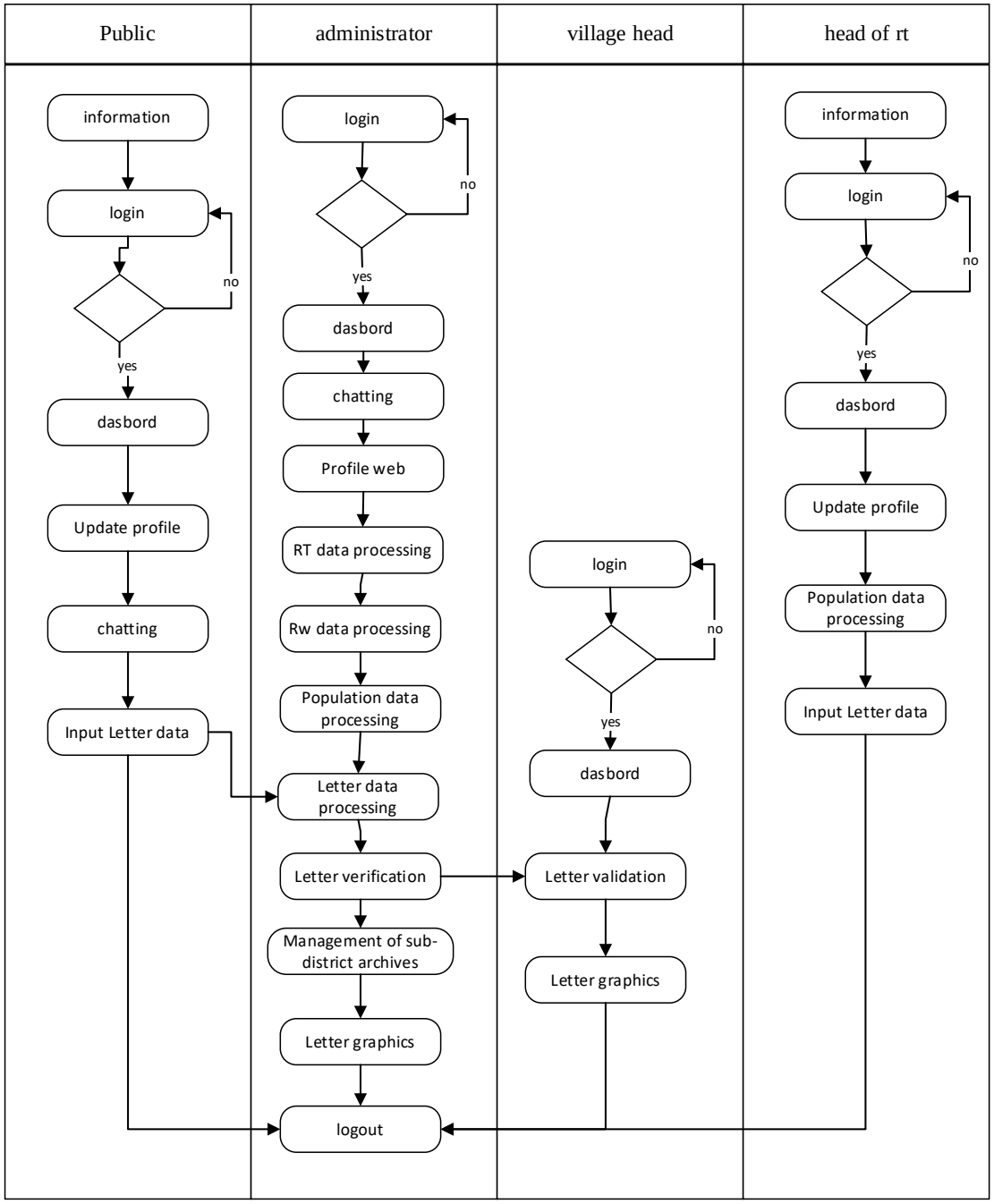

Figure 4. Activity Diagram

The next process is to create a class design diagram that shows the system structure of the form of class explanation that is being built. The next stage is coding. Coding translates the system design into a language the computer recognizes, and the programmer does so, translating the user's commands (Pratama & Marjun, 2022). Coding in short is writing several codes according to the program writing rules (syntax).

This research uses the PHP programming language and Visual Studio Code as text editors and MySQL DBMS. After registering or registering, the system starts logging in using the user's NIK and password. After successful login, a menu display will appear with user access rights.

The administrators can access all menus in the application and have full rights to view, add, change, and delete data with the approval of the Management.

The village head can access the approval menu for letters that have been validated by the administrator and see graphs of letters that have been created so far.

The head of the RT has the right of access to manage population data within the scope of the RT and input correspondence data to help the needs of its citizens.

The public has access to correspondence services from sub-districts according to the menu in the system. The public can view, add, change, or delete application letters as long as they have not been validated by the administrator.

This testing phase uses BlackBox Testing to determine: Inappropriate or inappropriate functions; Incorrect display; Database error; or Failed system performance.

Conclusion

The sub-district E-Government system aims to provide services to the community and assist sub-district staff in administration, especially in terms of archiving documents and so on. Apart from that, this system makes it easy for people to write correspondence anytime and anywhere. Designing Village Administration Management for Community Services begins with data collection (observation, documentation, interviews, and literature study) using the SDLC (System Development Life Cycle) development method. The system design was created using the Unified Modeling Language (UML) approach using Case Diagrams, Activity Diagrams, and Class Diagrams. Tests carried out with 8 respondents showed that the quality of the application was feasible. Along with the government's efforts to develop E-Government, this application can be used to apply information technology to develop sub-districts or villages

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