



WEB-BASED VILLAGE POPULATION DATA MANAGEMENT SYSTEM

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Abstract

Village Government is one of the governments in charge of organizing and managing resources in government at the Village level and has the obligation to administer population data. Currently, the Coal Village office is still handling the population data administration process manually. The system is still manual and uses Microsoft Word and Microsoft Excel, of course there are still many errors or shortcomings in the data processing process, which can slow down the process of adding data, searching for data and storing data. Apart from that, archiving files is less organized so it will make it difficult to find data. In an effort to overcome the problems above, a new website-based system is needed that will help management speed up and accurate population data. This computerized system will eliminate file accumulation. To achieve the objectives outlined above, this was done by conducting observations through interviews with the Village government to obtain needs for problems that often occur when managing population data. What is then carried out is system analysis, identifying user needs, process mapping, identifying frequently occurring problems, mapping system requirements so that it is hoped that the implementation of the right solution can be realized according to user needs. In an effort to overcome the problems above, a new website-based system is needed which will assist Village management in speed and accuracy of population data. With this population data processing information system, satisfaction in the service process can not only be felt by the community who act as customers, but can also be felt by all staff at the Coal Village Office because the recording and storage process becomes easier to manage.

1. Introduction

The Coal Village Office is a small part of Kuwus District where processing population data still uses manual methods. Still using Ms. Excel, Ms. Word, ledgers, forms for recording and processing population administration data. This makes the process of serving residents, recording resident data, and other management very slow so that residents feel they are wasting too much time on their services. The Coal Village Office also still stores data in the form of files arranged in a special cupboard, this makes it difficult to search for both old and new data when needed at any time. In an effort to overcome the problems above, a new website-based system is needed which will assist management in speeding up and accurate population data.

With this population data processing information system, satisfaction in the service process can not only be felt by residents who act as customers, but can also be felt by all staff at the Coal Village Office because the recording and storage process becomes easier to manage. Therefore, a system design was created for processing population data. It is hoped that it can improve service performance, simplify the data processing process and simplify the process of making reports at the Coal Village Office.

1.1 Literature Review

This title reviews previous journals of the same type, highlighting several similar studies conducted before.

Based on research conducted by Sholihah (2020) [Sholihah, D. (2020)] with the title "Website-Based Population Data Management Information System for Karang Baru Village Office, Mataram City", this research aims to design a website-based information system for managing population data at the Karang Baru Village Office, Mataram City. PHP, MySQL, and CodeIgniter Framework. This research uses the System Development Life Cycle (SDLC) method. The advantage of the system being designed is its ability to speed up the population data collection process, including birth and death.

According to research conducted by Atmojo et al (2019). [Atmojo, D. W. T. (2029)] with the title "Web-Based Information System for Managing Population Data in Parakanlima Village, Sukabumi," the aim of the research is to create a web-based application that can be used to manage population data in Parakanlima Village. The method used is an object-oriented approach, namely the Unified Approach (UA). The advantage of the system developed by this researcher is that it makes services easier and faster for village communities.

According to research conducted by Puspita et al (2019). [Puspita, D. (2019)] with the title *****Population Data Management Application using PHP Programming (Case Study: Suka Merindu District)*****, the aim of this research is to produce a population data management application using PHP programming. The method used in this research is ****Web Engineering****. The advantage of the system developed by them is that it simplifies and speeds up the process of processing population data in Suka Merindu District.

According to research by Maesaroh et al. (2019) [S. M., Dkk. (2020)] with the title "Web-Based Industry 4.0 Population Data Processing Application", the aim of this research is to produce a Population Data Management Information System that is faster and more accurate. This research uses the SWOT analysis method. The advantage of the system created is that it makes it easier for officers to manage population data.

1.2 Data Management

According to Tata Sutabri quoted [Siregar, S. R. S. (2016)] "Data management consists of data storage and data handling activities." Data Storage consists of collecting, searching and maintenance activities. Data handling includes various verification activities, which include checking data that appears on various related lists or comes from various sources, to find out various sources and to find out differences and discrepancies. This checking is carried out with file maintenance activities. maintenance)

And according to Sutarman quoted [M. A., Dkk. (2018)] Data Processing is the process of calculating/transforming input data into information that is easy to understand or in accordance with what is desired."

1.3 Data Management System

According to Dr. H. A. Rusdiana, Drs., M.M. & Moch.Irfan, S.T., M.Kom quoted [Arman. (2017)] that system comes from the Greek, namely systema, which means a set of parts or components that are interconnected in an orderly manner and constitute a whole. In addition, it can be interpreted as a group of elements that are independent, but mutual related as one unit. The definition of a system is basically a group of elements that are closely related to each other that function together to achieve certain goals.

1.4 Komponen-Komponen System

According to Kadir, quoted [Haswan, F. (2018)], the information system supports several components whose functions are very vital in the information system. The components of the information system are hardware, software, procedures, users and data base. In detail the components of the information system can be explained as follows:

1. Hardware, including physical devices such as monitors and printers.
2. Software or program: a set of instructions that allows hardware to process data
3. Procedure, a set of rules used to realize community data processing
4. Users are all parties responsible for system development, processing and use of system output.
5. A database is a collection of data that is interconnected with other data, stored on computer hardware and used by software to manipulate it, including; data, user and system.

1.5 System Design Tools

1.5.1 DFD (Data Flow Diagram)

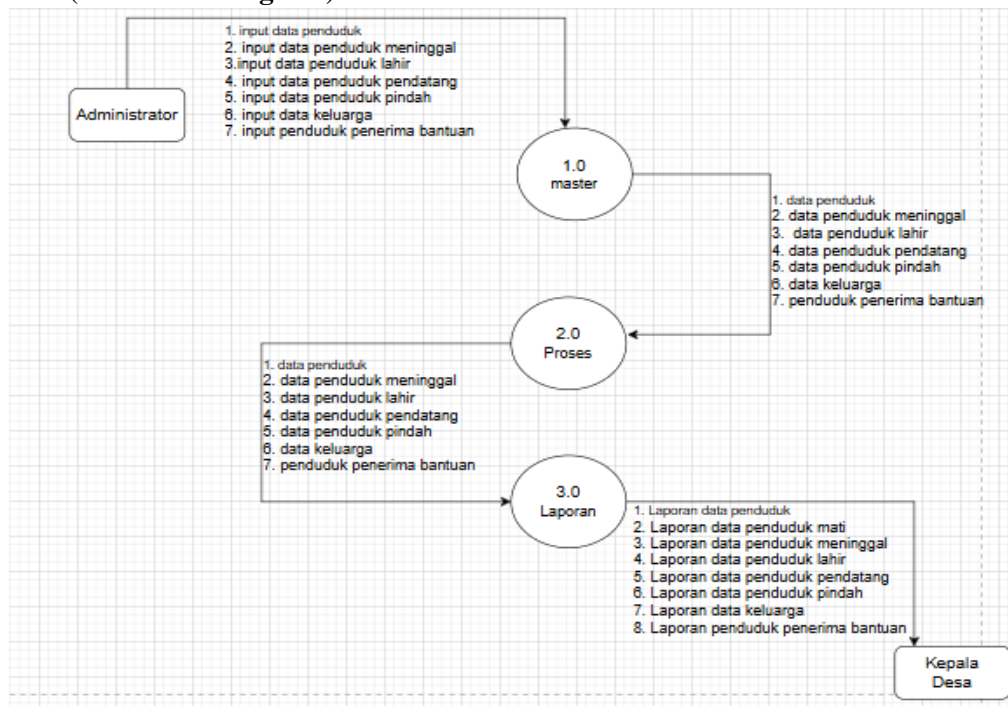


Fig 1. DFD System

1.5.2 ERD (Entity Relationship Diagram)

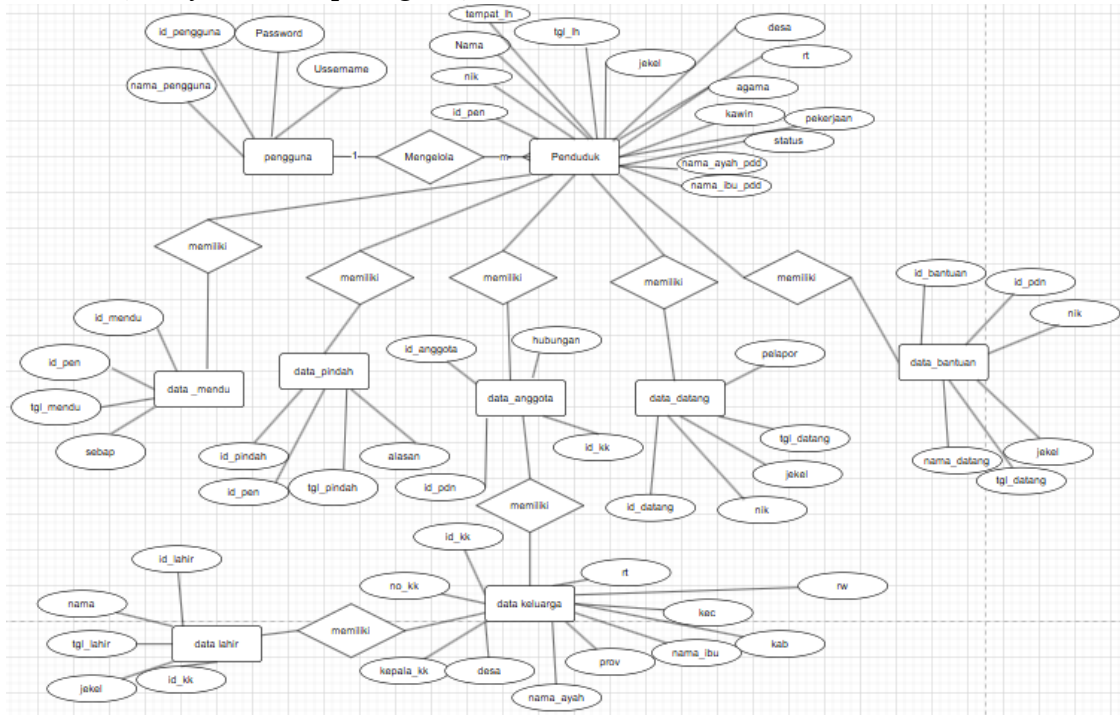


Fig 2. ERD System

2. Research Methods

2.1 Running System Analisis

2.1.1 Add Population Data

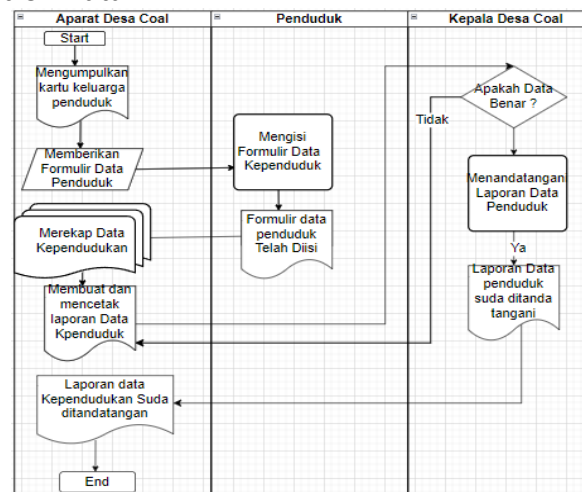


Fig 3. Running System Add Popoulation Data

Figure shows the manual system workflow for managing population data in Coal Village. Each step describes the process carried out, from data collection to reporting. This manual system shows the ongoing workflow at the Coal Village Office and is susceptible to reporting errors, this is the basis for developing a more automated system.

2.1.2 The system is running adding dead data

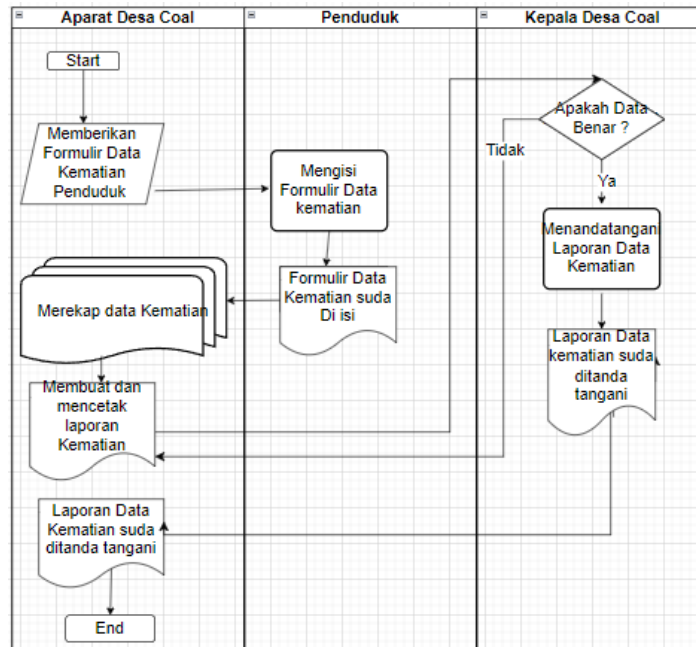


Fig 4 The system is running adding dead data

Figure shows the manual system workflow for adding death data in Coal Village. Each step describes the process carried out.

2.2 Research Framework

The following are the stages carried out in research at the Coal Village Office, Kuwus District, West Manggarai Barat

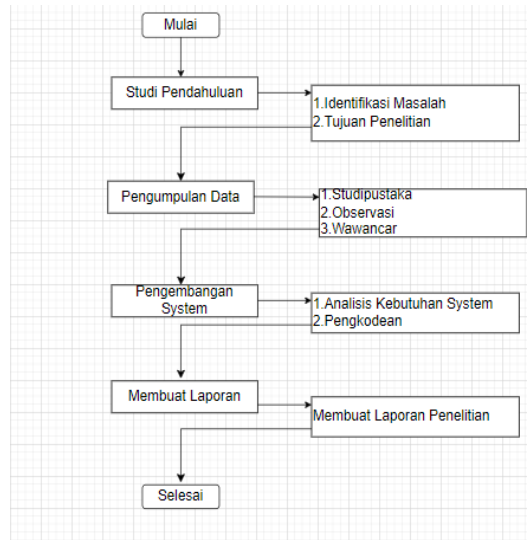


Figure 5. Research framework

2.2.1 Preliminary Study

a) Problem Identification

The problem identified in this research is at the Coal Village Office, Kuwus Subdistrict, West Manggarai Regency.

b) Research Review

The purpose of this research is to address the problems mentioned above. In order to develop a web-based village population data management system that meets the needs of the users, a literature study is necessary.

2.2.3. Data Collection Methods

In this final project proposal report, the researcher employs three data collection methods:

a) Literature Review

In this research, several references were taken from the internet related to web-based village population data management systems. These include: [S., Dkk. (2020)] Population Data Management Information System of Karang Baru Urban Village, Mataram City Based on Website. [Atmojo, D. (2019)] Web-Based Population Data Management Information System of Parakanlima Village, Sukabumi." (Puspita et al., 2019) "Population Data Management Application Using PHP Programming (Case Study: Suka Merindu Sub-district)." (Siti Maesaroh, 2020) "Web-Based Population Data Processing Application for Industry 4.0." (Shanti Ria Serepia Siregar, 2016) "Design of Village Population Data Management Information System (Case Study in Sangiang Village Office, East Sepatan Sub-district)."

b) Observation

To obtain accurate information for this research, observations were conducted at the Coal Village Office, Kuwus Sub-district, West Manggarai Regency. The purpose of this observation is to collect accurate and relevant data regarding the practices and data management systems at the Coal Village Office. During the observation in Coal Village, several steps were taken:

1. Identifying how data in Coal Village is managed, including the processes of data collection, storage, and utilization by the Village government.
2. Evaluating the completeness and accuracy of the available data in this Village, and how that data is used for decision-making.
3. Identifying problems and challenges faced by the Coal Village government in data management, as well as the needs required to improve the efficiency and effectiveness of data management.

c) Interview

The interviews conducted in Coal Village, Kuwus District, West Manggarai Regency, aimed to gather data related to village data management. In this interview, there was direct interaction with the village officials, including:

1. Interviewee: Rofinus Sidi

Position: Village Head

Date: March 27, 2024

Time: 08:30

2. Interviewee: Albino Ngapu

Position: Village Operator

Date: March 28, 2024

Time: 09:30

3. Interviewee: Siprianus Pandi

Position: Village Secretary

Date: March 29, 2024

Time: 11:30

The individuals mentioned above play a key role in the management of data in Coal Village. This interview process is an essential part of the data collection method to understand how data in Coal Village is managed, accessed, and utilized. Various questions were posed, covering several aspects, such as:

1. Gathering information about the system used by Coal Village in managing population data. This includes software or manual methods employed.
2. Asking about the challenges faced by the village in data management, such as technological limitations, human resources, and infrastructure issues.
3. Exploring how the data collected from residents is utilized by the village government, whether for population count, development planning, or decision-making.
4. Questions about the training received by village staff in managing data were also raised. This includes technical training on the use of data management software as well as other training.

2.2.3. System Development

- a. System Requirements Analysis

Analyzing the requirements of the system to be developed to ensure it meets the users' needs.

- b. Coding

For system design, programming codes such as CSS (Cascading Style Sheets), PHP (Hypertext Preprocessor), MySQL (Relational Database Management System), and HTML (Hyper Text Markup Language) are used.

2.2.4. Creating a Report

In this stage, the researcher subsequently creates a report based on the research conducted.

3. Result and Discussion

3.1 User Login Page

On the login page, the admin can access the website by entering a username and password.



Fig 6. user login page

3.2 Home Page

On the main page the system will display the entire village population data menu

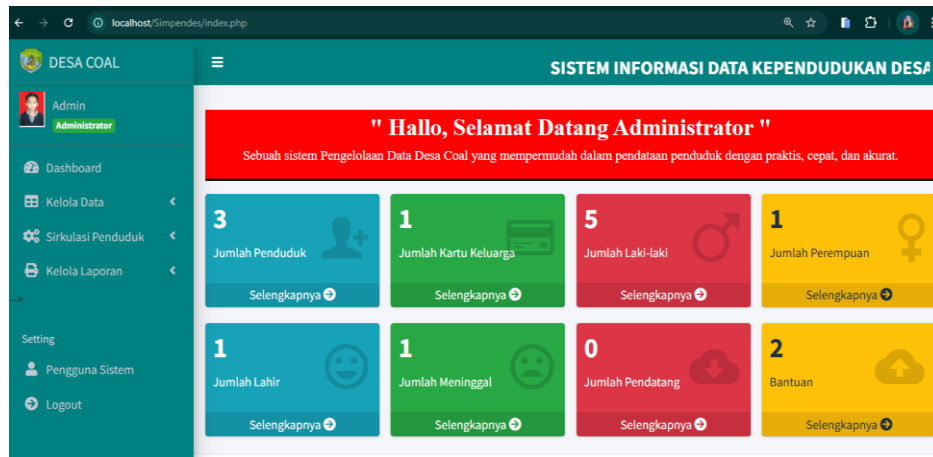


Figure 7. Home Page

3.3 Testing the Population Data Menu

On the population data menu page displays the add data, detail, edit, delete and search buttons.

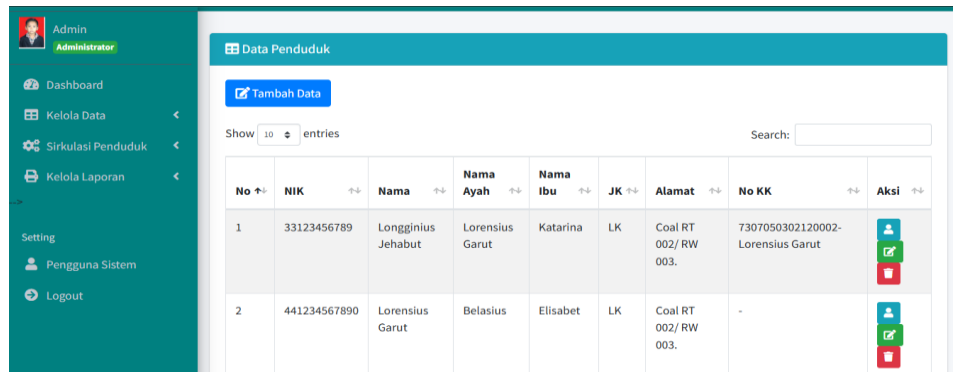


Figure 8. Testing The Population Data Menu

3.4 Testing the Birth Data Menu

The birth data menu page displays add data, edit, delete and search buttons.

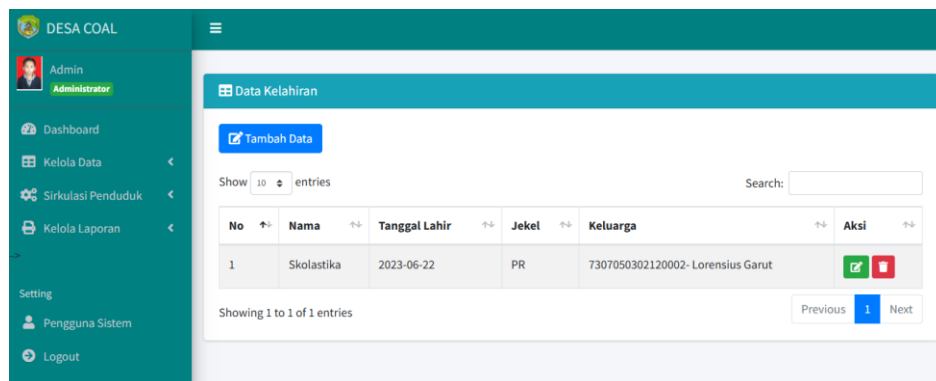


Figure 9. Testing The Brith Data Menu

3.5 Report Date

in the report management menu displays all population data

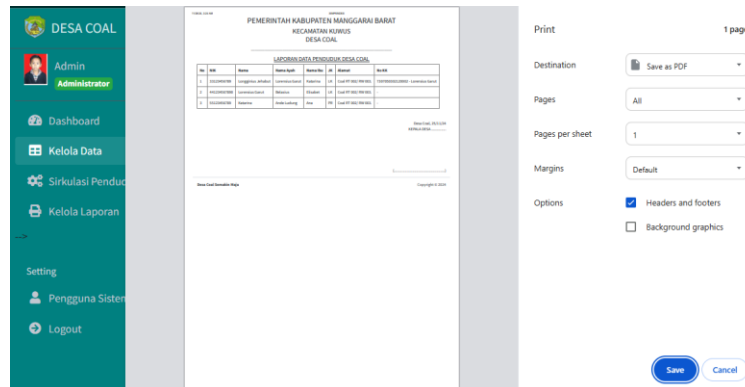


Figure 10. Report Data

4. Conclusions

The web-based population data management system for Coal Village provides a modern solution for managing population data efficiently, accurately and organized. With this system, various village administration activities, such as recording births, deaths, movements and family data, can be carried out more quickly and transparently. This system also makes it easier to access information for authorities, increases data accuracy through an automatic validation feature, and supports safer data storage compared to manual methods.

Overall, the implementation of this system supports better decision making at the village government level, improves public services, and supports technology-based governance.

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