

Information System Data Processing Population Article 03 Village Residents Cibeber

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Abstract

Effectiveness and efficiency are mandatory requirements in this modern era, not least in terms of population data processing at the RT/RW level. This is what underlies the authors carry out research related to the design of information systems for data processing residents of RW 03 Kel. Cyber. The problem that occurs is that data processing is still conventional where all archives are still recorded manually in the master book so that the data collection process takes a long time. And submitting a cover letter takes a long time because it has to match the existing data. In addition, data is often lost when transferring management from each period. Therefore, it is necessary to update by utilizing currently available technology to facilitate and simplify the work of the employees on duty. The solution proposed by the author to solve this problem is to use the waterfall method by creating a desktop-based application. The result to be achieved is to make it easier to store data using a database and the process of submitting correspondence becomes more effective and efficient.

Keywords

system design; population data



I. Introduction

Information technology is developing rapidly, with governments and private institutions using computers as a tool to improve their services. Rukun Warga or often abbreviated as RW is a state institution consisting of several RT groups in a village/kelurahan and led by a RW head. The formation of RW in the village or kelurahan has certain goals that are very beneficial for the community, so that it has a role and function in carrying out government functions at the kelurahan level. One of the tasks and functions of the RW is to help provide population data and permits, assist in the implementation of population data collection and assist government administration services.

The community structure in RW 03 Cibeber Village in the service and processing of population data is still done manually to collect all information about population data, so that if population data is changed it takes a long time, moreover the level of accuracy is still not paid attention to. perfect when you consider the whole process is still done manually. And data loss from messy and disorganized archives is still common. Therefore, it is necessary to have an information system to overcome all these problems that are able to support in terms of facilitating services and data storage so as to facilitate the work of the RW management on duty and of course increase the quality of service to the community because they are able to serve effectively and efficiently.

II. Review of Literature

2.1 Definition of Information Systems

Kadir explains that, as a statement, it is a formal process for compiling information, processing it into information, and distributing it to users. Diana & Setiawati has emphasized that data processing systems, sometimes referred to as data processing systems, are often systems that do not include a large number of components (manual and computer) for data collection, storage and retrieval. Information about records. Based on the above suggestions, we can conclude that a database is a collection of data that is processed to produce the information required by the user.

2.2 Definition of Data Processing

Based on observations, data processing is processing or manipulating data into a form or form of information that is more informative. According to experts, there are several definitions, including:

George R. Terry explains: "Information technology is a series of information operations designed to achieve the desired results or results."

"Computing is the time used to translate data modifications into useful information," said Andri Kristanto.

So the author can conclude that data processing is an activity to process data such as processing raw data into the necessary information.

2.3 Definition of Population and Population Administration Population

Includes Indonesian citizens and foreign nationals residing in Indonesia. Population is a matter of number, structure, age, gender, religion, birth, marriage, pregnancy, death, distribution, mobility and welfare and has the potential to influence politics, economy, social and culture.

The management model is a set of organized and managed operations for managing population and document data through population, user registration, population data management, and application of results for public services and development. Other parts. Resident registration is a letter issued by a law enforcement agency and contains valid evidence from the original letter issued by the registrar and the marriage office. Registrars include resident registration, event resident registration, population collection for at-risk countries, and provision of paper residents in the form of identification or books. Proof of residence. The occurrence of population events identified as a result of problems or changes in family cards, ID cards, and/or other population documents. This includes forwarding, change of address, residency status, and permanent residency restrictions.

Population modeling is a collection of data and a collection of data from population data and data by recording population data, population status data, controlling population management information, and utilizing the results for public services and other developments. If the service quality felt by students during the lecture is satisfactory, then directly or indirectly. (Fortunata and Toni, 2020)

2.4 Definition of System Design

O'brien & Marakas emphasizes that the design process is the process of planning and deciding how to process software information from the results of physical examinations to meet the needs of people, including users of images, information, and action data (O'brien & Marakas, 2013).

Kristanto said that system design is a phase that requires design skills for IT elements to use the system. Namely, the selection of IT tools and software for the new system (Cristiano, 2013). They are as follows:

- a. Turning the initial data into a reliable design.
- b. Create a plan and budget to ensure an organized and coordinated implementation of your new system.
- c. Build performance and test plans.
- d. Create procedures for system users.
- e. Create a program.
- f. Complete system design documentation.

2.5 Understanding Unified Modeling Language (UML)

UML is a visual language for modeling and communication systems using text and supporting diagrams. "Unified Modeling Language (UML) is a language for defining, describing, and constructing the basic constructions of software systems, including modeling business rules." UML provides an image display that shows various aspects of the system. UML has a variety of images, including using image levels, activity levels, image classes, and more.

2.6 Microsoft Office Access

Microsoft Office Access is easy to use, flexible, and easy to integrate database application programs. In general, the structure of a database in Microsoft Access is: A

- a. Table is a place to collect data that is retrieved in the form of rows and columns.
- b. Queries are used to filter data in the order they are needed.
- c. Forms are used to display information, enter information, and exchange information.
- d. Report Used to generate (display or print) information in the form of a report.
- e. Page Used to build a website with a login page.
- f. Macros to automate frequently used commands when processing data.
- g. Modules are small programs or procedures used to design advanced data processing application modules.

2.7 Visual Studio

Hasan & Riswaya emphasized that this application is a ready-to-use software that can be used to carry out instructions from users to obtain accurate information depending on the purpose of purchasing the book. Application means solving problems using one of the software design techniques, which usually uses design techniques (Hasan & Riswaya, 2014).

III. Research Methods

The research method used in this research are data collection methods and program development methods:

3.1 Data Collection Method

The method used is a situation analysis system, namely collecting and retrieving data, which is carried out in stages, namely narrative and descriptive. The shooting technique is:

- a. Observation

With this method, the researcher conducts activities as a population data processing center in the 03 Residents Rukun, Cibeber sub-district.

b. Interview

In this mode, the researcher asks questions to the management of RW.03, Cibeber sub-district about activities related to government population data processing in order to clarify and complete information about what the researcher does not know.

c. Library Studies

Apart from these activities, apart from conducting research, he also added information in the form of beliefs, information collected from books and posted online.

3.2 Software Development Techniques

The method development method used in this research is the waterfall method from the engineering system foundation. However, according to Sukanto and M. Salahuddin, the sweat sample consisted of five components, while the researchers only used two of all components. Namely, the details and patterns of software requirements.

IV. Results and Discussion

4.1 Ongoing System

Currently the population of data managed by users is still using a logbook, and the data is stored as a database. Obtaining a residence permit is definitely related to management or a change in status. The obstacle in carrying out this task is an inefficient and inefficient information system, which makes it difficult and slows down the movement of the population.

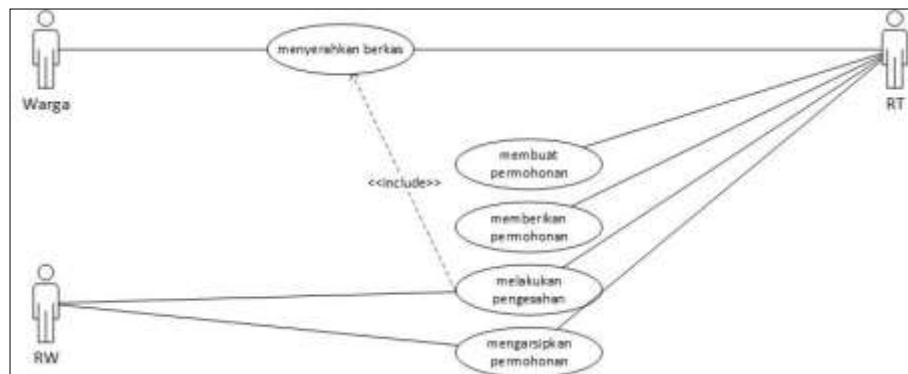


Figure 1. Current use case system

4.2 Design of the Proposed System

In order to solve the problems related to the processing of personal data, your proposed system needs to provide the response requested by the user. This system enables user-friendly communication to speed up service delivery and make it easier for users to access the information they need.

a. Use Case

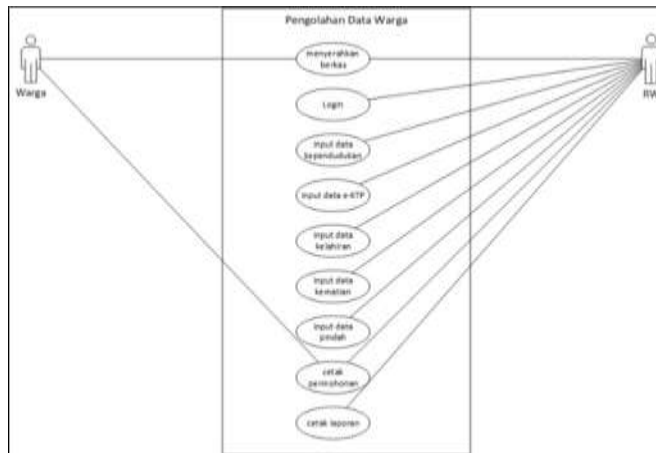


Figure 2. Use case diagram design

b. Design Class Diagram

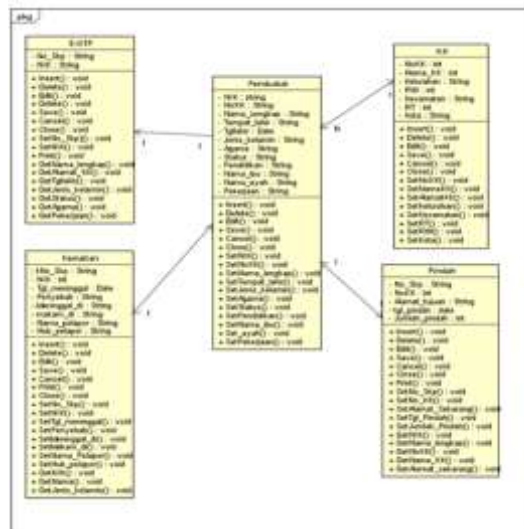


Figure 3. Class diagram design

c. Design Prototype Design

Following is an example of the number of records management for making applications in Rukun Warga 01 Cibeber Village:

1. Login Display The login

Form is used to enter the Citizen Data Processing Information System Program. Author has a username and password for data protection. Only registered users can use the program.



Figure 4. Login view

2. Main Menu Display

Menus in this information system are: Files, Population Data, Letters and Reports. In the File submenu there are Login, Logout, User List and Logout. There is a family card in the Personal Data menu. The Applications menu contains e-KTP data applications, native data applications, dead data applications, and data transfer applications. The report menu has population data options.



Figure 5. Main menu display

3. Display Population Data

No	Nama Lengkap	Tempat Lahir	Tanggal Lahir	Jenis Kelamin	Agama	Status Warga	Kecamatan	Desa/Kelurahan	RT/RW	Kecamatan	Agama
1											

Figure 6. Population data display

4. Display KTP Data



The screenshot shows a software window titled "Data KTP" with a sub-header "Input Data KTP". On the left, there is a placeholder image of a person in a suit. To the right, there are several input fields: "Nomor KK", "Nomor KTP", "Nama Lengkap", "Tempat Lahir", "Tanggal Lahir" (with a calendar icon and the date "8/ 2/2021"), "Jenis Kelamin" (a dropdown menu), "Status Nikah" (a dropdown menu), and "Alamat" (a larger text area). At the bottom, there are four buttons: "Simpan", "Ubah", "Hapus", and "Tutup".

Figure 7. ID card data display


5. Display Birth Data



The screenshot shows a software window titled "Data Kelahiran" with a sub-header "Input Data Kelahiran". The form contains the following fields: "Nomor KK", "Nama Lengkap", "Tempat Lahir", "Tanggal Lahir" (with a calendar icon and the date "8/ 2/2021"), "Jenis Kelamin" (a dropdown menu), "Nama Ayah", "Nama Ibu", and "Alamat" (a larger text area). At the bottom, there are four buttons: "Simpan", "Ubah", "Hapus", and "Tutup".

Figure 8. Birth date display

6. Display Death Data



The screenshot shows a software window titled "Data Kematian" with a sub-header "Input Data Kematian". The form contains the following fields: "Nomor KK", "Nomor NIK", "Nama Lengkap", "Jenis Kelamin", "Tanggal Meninggal" (with a calendar icon and the date "8/ 2/2021"), "Tempat Kejadian", "Penyebab", "Saksi 1", "NIK", "Saksi 2", and "NIK". At the bottom, there are four buttons: "Simpan", "Ubah", "Hapus", and "Tutup".

Figure 9. Death data display

7. Display Population Move Data

Figure 10. Population movement data display

8. Display Population Data Report Display



Figure 11. Population data report display

d. Prototype Testing

In this study, the test was carried out using a black box test. If you are trying to do this with the aim of avoiding errors or bugs after running it. Six tests were carried out in this study, namely: (1) login, (2) population data form, (3) electronic identity card data form, (4) birth data form, (5) referral form, and (6) death data form.

Table 1. Test Results Login Form

No	Testing Scenario	Test Case	Expected	Results Test Results	Conclusion
1	Username and Password are not filled then login	Username and password are empty	system will refuse and cannot login	As expected	Valid
2	Fill in one of the username or password fields	One the username or password column is filled	Unable to login to the application	As expected	Valid
3	Filled in the correct	username and password are filled in based on the registered account	system accepts login access	As expected	Valid

Table 2. Results of Testing Population Data Form

No	Testing Scenario The	Test Case Obtained	resultsExpected	Testing Results	Conclusion
1	Fill in all the fields according to the data then click the save button	Fill in the data starting from no. KK until the original address, then click save	Saved data	As expected	Valid
2	Changing data	Select column no. KK on the master data, and then edit the wrong data	Data successfully changed	As expected	Valid
3	Doing automation at the age column	input KK date of birth according to the data	column automatically filled image	accordance expectancy	Valid
4	Deleting data	Choosing no column. KK on the master data, then pressing the delete button The	data was successfully deleted	As expected	Valid
5	Exiting the population data display	Pressing the close button	Successfully exiting the population data display	As expected	Valid

Table 3. Testing Results of KTP Data Form

No	Testing Scenario	Test Case	Expected	Results Testing	Conclusions
1	Fill in all the fields according to the data and then click the save button.	Fill in the data starting from no. KK to add photos, then click save	Saved data	As expected	Valid
2	Changing data	Select column no. KK on the master data, then edited the wrong	data The data was successfully changed	As expected	Valid
3	Delete data	Select column no. KK on the master data, then pressing the delete button	data was successfully deleted	As expected	Valid
4	Exiting the ID card data display	Pressing the close button	Successfully exiting the mail data display	As expected	Valid

Table 4. Testing Results of Birth Data Form

No	Testing Scenario	Test Case	Expected	Results Testing	Conclusions
1	Fill in all the fields according to the data and then click the save button.	Fill in the data starting from no. KK to address, then click save	Saved data	As expected	Valid

2	Changing data	Select column no. KK on the master data, then edited the wrong	data The data was successfully changed	As expected	Valid
3	Delete data	Select column no. KK on the master data, then pressing the delete button	data was successfully deleted	As expected	Valid
4	Exiting the birth data display	Pressing the close button	Successfully exiting the mail data display	As expected	Valid

Table 5. Testing Results Death Data Form

No	Testing Scenario	Test Case	Expected	Results Testing	Conclusions
1	Fill in all the fields according to the data and then click the save button.	Fill in the data starting from no. KK to NIK of witness 2, then click save	Saved data	As expected	Valid
2	Changing data	Select column no. KK on the master data, then edited the wrong	data The data was successfully changed	As expected	Valid
3	Delete data	Select column no. KK on the master data, then pressing the delete button	data was successfully deleted	As expected	Valid
4	Exit death data display	Pressing the close button	Successfully exited the mail data display	As expected	Valid

Table 6. Testing Results of Population Move Data Form

No	Testing Scenario	Test Case	Expected Results	Test Results	Conclusion
1	Fill in all the fields according to the data then click the save button	Fill in the data starting from the letter of transfer number to the address of origin, then click save	Data is stored	as expected	Valid
2	Change the data	Select the column number of the letter of transfer in the master data, then edit the wrong	data Data successfully changed	As expected	Valid
3	Deleting data	Selecting the column for the transfer letter number in the master data, then pressing the delete button	data was successfully deleted	As expected	Valid
4	Exiting the population relocation data display	Pressing the close button	Successfully exiting the mail data display	As expected	Valid

Table 7. Results Testing Data Report Form

No	Testing Scenario	Test Case	Ha Expected	Test Results	Conclusion
1	Print population data population	Selectdata then click print	Population data successfully printed	As expected	Valid
2	Exit data report display	Pressing exit button	Successfully exited data report display	As expected	Valid

V. Conclusion

After switching to the previous data processing process, which is still manual, the use of the program system, the work of RW officers becomes faster and more efficient. It can be concluded that:

1. When collecting data previously recorded in the general ledger, it is safer and easier to find population data to report and review data.
2. With this system, it can improve the performance of the management of community units in order to facilitate data processing, data archiving, needs and reporting.

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