


Design of a digital system for community services in the village of kuala II

Ari Abdillah ¹, Badariatul Lailiah ²

¹ Department of Information Technology, Bina Sarana Informatika University, Jakarta, Indonesia

² Department of Information Systems, Bina Sarana Informatika University, Pontianak, Indonesia

ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received Jul 10, 2023 Revised Jul 30, 2023 Received Jul 31, 2023</p>	<p>In this study, the object was taken regarding a web-based community service information system in Kuala II Village, Sui Raya District. In the process of serving the community, especially in the field of making certificates in Kuala II Village, Sui Raya District, previously it was still using a manual system. Where people have to come to the sub-district office and fill out a form and come back again to inquire about the processing and also still have to come back to pick up the results. With this manual system it causes less efficient time. So a study was conducted with the aim of creating a new system that could help and speed up the process of service to the community in Kuala II Village, Sui Raya District. In this research analysis, new information was generated, namely a web-based community service information system in Kuala II Village, Sui Raya District. With this system, it is hoped that it will expedite work and facilitate the community in the process of making services. The conclusion obtained with this new system is that the community can speed up the process of making a statement from the Jelupang Village. While the advice that must be considered is the need for human resources who can run and develop the system properly.</p>
<p>Keywords:</p> <p>Application; Service; Population; PHP; MySQL.</p>	<p><i>This is an open access article under the CC BY-NC license.</i></p>
<p>Corresponding author:</p> <p>Badariatul Lailiah, Information Systems Major, Bina Sarana Informatika University, Jl. Abdurahman Saleh, No. 18, Pontianak, West Kalimantan, 78124, Indonesia, Email: badariatul.bdl@bsi.ac.id</p>	

1. INTRODUCTION

According to Law No. 6 of 2014, a Village is a traditional village or also referred to by another name, hereinafter referred to as a Village, is a legal community unit that has territorial boundaries that are authorized to regulate and manage government affairs, local community interests based on community initiatives, rights origin, and/or traditional rights that are recognized and respected within the government system of the Unitary State of the Republic of Indonesia (Kesuma & Juniati, 2020). The village government is one of the governments in charge of regulating, managing resources in government at the village level and has an obligation to carry out population administration as a form of service to the community. (Adityawarman et al., 2018). In Indonesia, the 1945 Constitution mandates the State to fulfill the basic needs of every citizen for their welfare, so that the effectiveness of a government system is largely determined by the merits of public service delivery (Maria Stella, 2019).

One of the problems faced by government agencies within the Padukuhan scope is the population administration service process which is still conventional or not computerized. At this time

the administrative service system in Kuala II Village, which is part of Banjararum Village, is still bookkeeping and data storage is still in the form of files, which slows down access to data and preparation of reports. Then when processing cover letters in Kuala II Village it was also still conventional, namely residents could not be served 24 hours. With such a process, of course, it takes a long time so that it will hamper services to the community (Paryanta et al., 2017) .

Based on these problems, a computerized system is the best solution for building and implementing the Village Population Service (PMD) application so that it can facilitate the recording process, search for data faster, make storage easier to manage, automatically calculate population reports, and simplify the process of printing cover letters for residents. A computerized system is the use of a computer as an auxiliary tool in data processing activities which are carried out manually (Mondev et al., 2018) .

2. RESEARCH METHODS

2.1. Method Data Collection

The data collection method is the technique or method used by the author to collect data which later the data will be used by the author to obtain materials, information, and information related to this research (Imron, 2019) . To obtain data that is truly accurate, relevant and reliable, the authors collect data sources by means of observation, interviews, literature studies (Asmara, 2019) .

a. Observation

The approach used in this study is a qualitative approach using observational data collection techniques (Jaelani et al., 2020) . By reviewing and coming directly to the Kuala II village head's house to collect the required data.

b. Interview

Writer explain intents and purposes study related topic study with do Interview or ask answer in a manner direct to Head Kuala II village regarding administrative processes population the . Interview is the excavation process information between the interviewer and the respondent are aiming For get the required data . (Yudiantara et al., 2021)

c. Studies Literature

Type research conducted _ is studies References with stage studies study to existing books , literature , records , and reports relationship with problem solved _ Where aim For study and read existing literature _ relationship with problem that becomes object study (Hidayati & Panama, 2019)

2.2. Method Development System

Methods are steps or rules for doing something. *System Development Life Cycle* (SDLC) is a logical process used by a system analyst to develop an information system that involves requirements, validation, training, and the system owner (Wahid, 2020)

The System Development Life Cycle (SDLC) is an approach that has stages or stages for analyzing and building a system design using a cycle that is more specific to user activities (Munthe, 2019) . Draft cycle development device soft This apply For device hardware and devices software , such as : device soft web based , android based , java programming , python, and so on . (Sumiati et al., 2021)

The Waterfall model is a model that provides a sequential or sequential software lifeflow approach starting from analysis, design, coding, and testing. The following is a picture of the waterfall model in the SDLC (*System development Life Cycle*) (Handrianto & Sanjaya, 2020) .

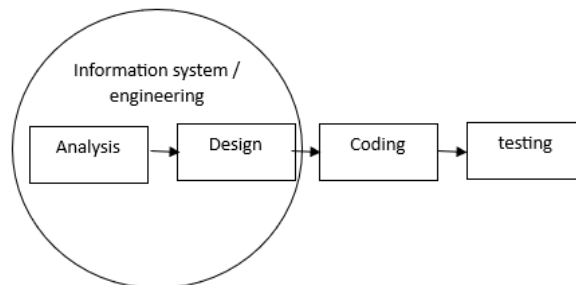


Figure 1. Waterfall Model

The following are the stages of the waterfall model, namely:

a. Analysis

In stage This writer start analyze What just need from the system, start from need functional system as well non- functional requirements from system (Firmansyah & Udi, 2017) .

b. Design

Software design is a process of several stages in the design of making software programs including data structures, software architectures, interface representations and coding procedures. This stage translates software requirements from the needs analysis stage to a design representation so that it can be implemented into a program at a later stage. At this stage, the results of the existing software design are documented.

c. Coding

The design must be translated into a software program. The result of this stage is a computer program according to the design that was made at the design stage. Or stages writer program with such as programming language php , html , scc and others.

d. Testing

This done For know How application design system This is Already in accordance or No (Amalia et al., 2021) . Like validation login page , whether in accordance with hope .

e. Supporters

It is possible that a software has changed and an error has occurred which was not detected during testing. The support phase includes the correction of various errors that may arise and the development and maintenance on a regular basis.

2.3. Population Analysis

It is hoped that the application made will be able to help residents who wish to submit a letter of introduction from the community no longer need to fill out conventional forms and come directly to their homes or offices, but with online media it can be accessed anytime and anywhere. The following is the specification of the needs analysis of the application program to be made:

Citizen Page

- A1. Residents can access the registration page
- A2. Residents can access the village profile page
- A3. Residents can access the cover letter submission page
- A4. Residents can access the History page and the status of the cover letter

Admin admin page

- B1. Admin manages family card data
- B2. Admin manages cover letter data
- B3. Admin manages the data of daru village residents
- B4. Admin manages user data
- B5. Admin manages village residents

Unified Modeling Language (UML)

UML is a tool/model for designing object-oriented software development. UML itself also provides a standard for writing a blueprint system, which includes business process concepts, writing classes in specific program languages, database schemas, and components needed in software systems (Sonata & Sari, 2019) .

Use Case Diagrams

Use case diagrams are used to communicate human (actor) interaction with what the system can do. A use case can represent several paths of human interaction with the system and each path is referred to as a scenario (Abdillah et al., 2019) . The use case diagram illustrates the relationship between actors and the system in the design of the population administration information system in Kuala II Village.

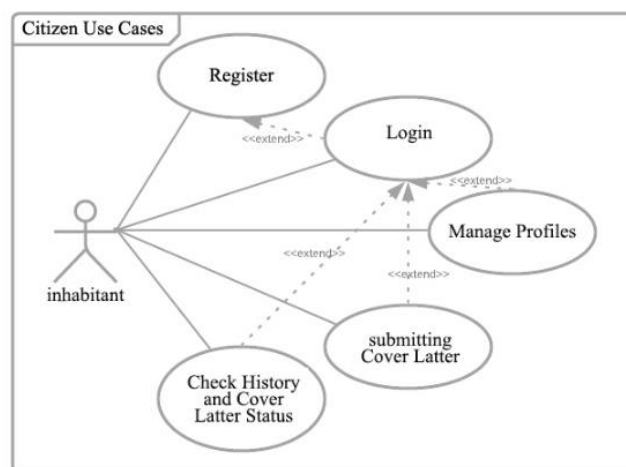


Figure 2. Use Case Citizen Diagram

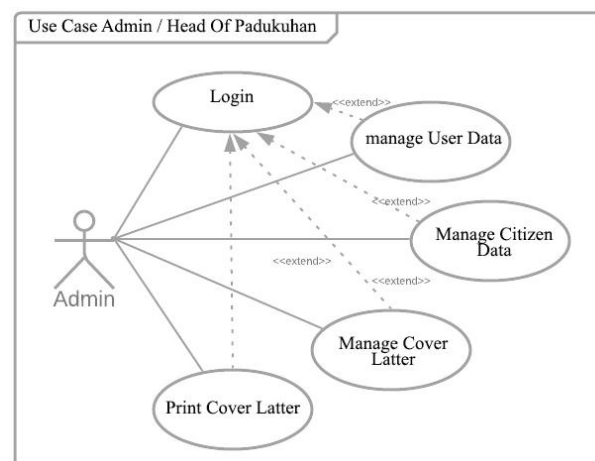


Figure 3. Admin Use Case Diagram

Activity diagrams

Activity Diagram is a special state diagram , where part most of the state is action and some big transition triggered by the completion of the previous state (internal processing). because the Activity Diagram does describes the internal behavior of a system in a manner exact, however more describe processes and pathways activity from the upper lever in a manner general . (Revelation , 2020) . Activity diagram in Figure 4 which is steps in the process of work system created . _

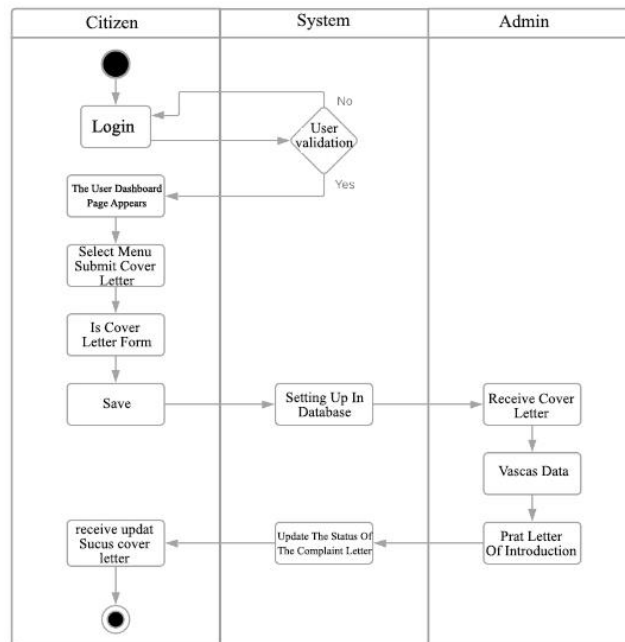


Figure 4. Activity Diagram

Entity Relationship Diagram (ERD)

The Entity Relational Diagram (ERD) model is a model based on the assumption that the real world consists of a collection of basic objects called entities and the relationships between these entities. (Fadli & Sunardi, 2018) . In general, the ERD in Figure 5 explains the relationship between entities that have relationships with other entities.

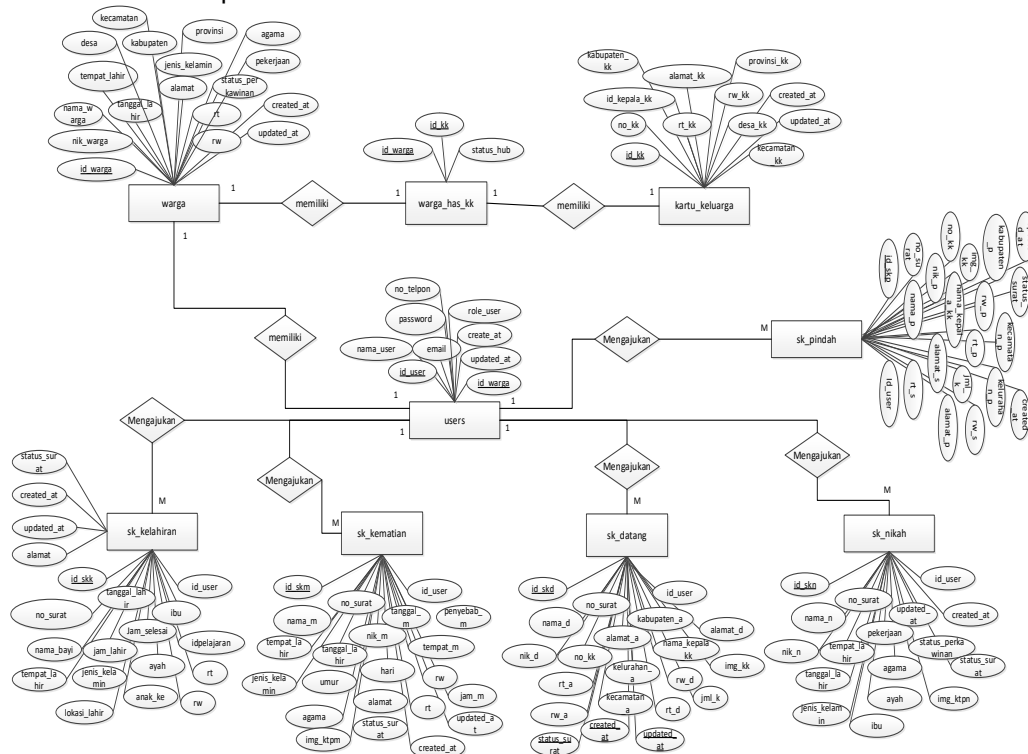


Figure 5. Entity Relationship Diagram

3. RESULTS AND DISCUSSION

The results of the research are the implementation of the interface design for the applications that are made.

a. Login Page Display

This page is used for users such as residents and admin administrators to be able to enter the main page by entering the correct username and password.

Figure 6. Display of the Login Page

b. Display Main menu page

In Figure 7 is the appearance of the main admin page, where all master data activities can be done on this admin page menu.

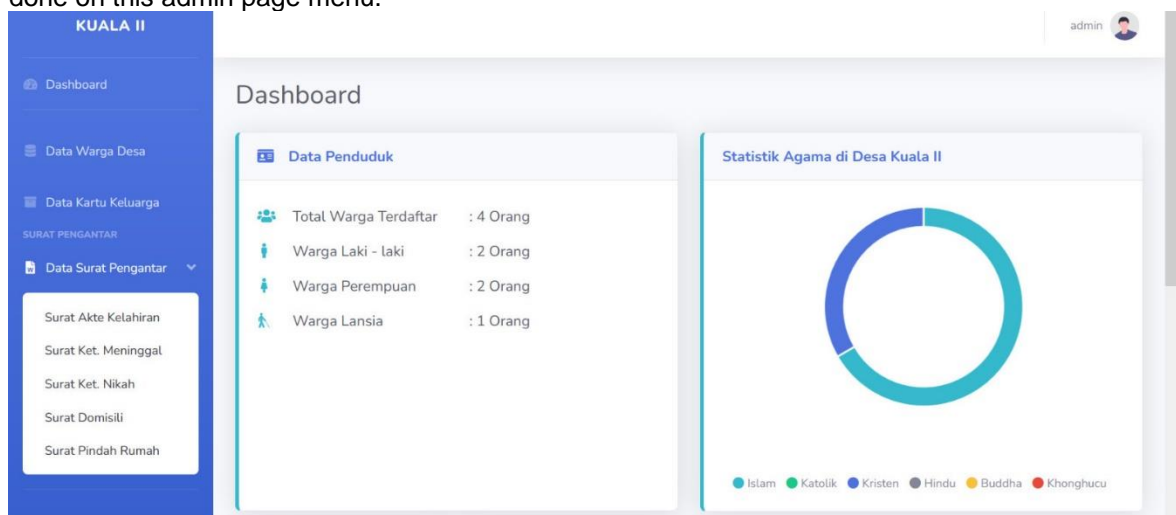


Figure 7. Display of the Admin Page

For Figure 8 is the display of the user's main page, on this page there is a dashboard menu, submit a cover letter and profile. At the top right there is a profile menu that is used to change passwords or personal information. On this page, users can also see cover letter data and user data according to the current login session filter.

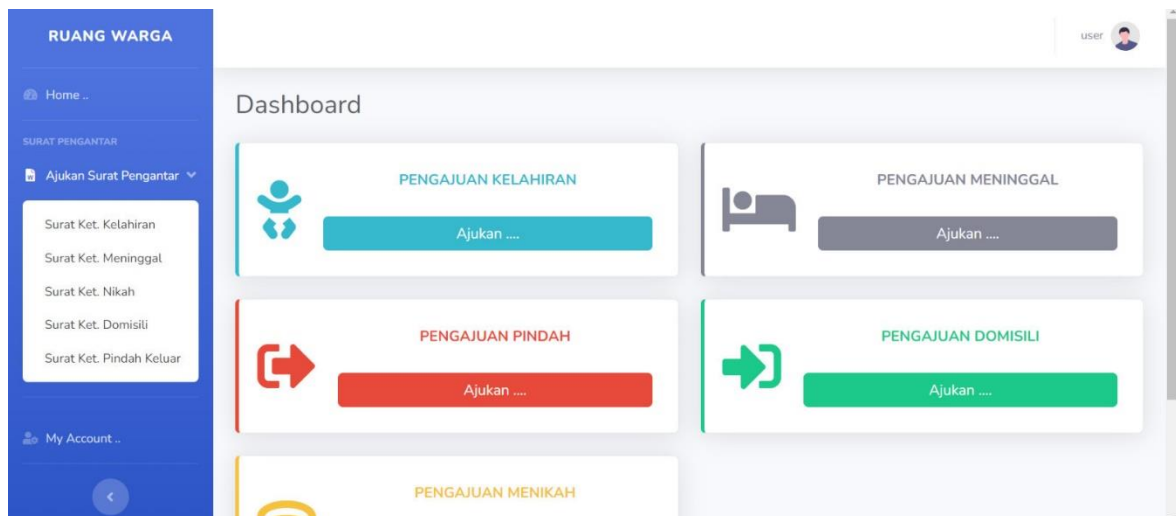


Figure 8. Display of User Pages

c. Appearance Submission of Cover Letter

In Figure 9 is the display form for adding the delivery letter data that residents want to submit later. Citizens only need to fill in the required letter data then click the save button to submit.

 The screenshot displays the 'Tambah Surat Pengantar Kelahiran' form. At the top, there's a 'No Surat' field with the value '010/SKK/VII/2023' and a 'Kembali' button. The form is divided into two main sections: 'A. Data Bayi' and 'B. Data Lain'.

Section A includes:

- 'Nama Bayi' field with placeholder 'Nama Lengkap Bayi' and a 'Please fill out this field.' message.
- 'Data lahir' section with 'Tanggal Lahir' (mm/dd/yyyy), 'Jam Lahir' (time picker), and 'Jenis Kelamin' (dropdown menu).
- 'Nama Ayah' field with placeholder 'Nama Ayah Bayi' and a 'Please fill out this field.' message.
- 'Nama Ayah' and 'Nama Ibu' fields with placeholder 'Nama Ayah Bayi' and 'Nama Ibu Bayi' respectively.
- 'Anak Ke' field with placeholder 'Masukan Angka'.
- 'Alamat' section with 'Alamat', 'RT', and 'RW' fields.

 Section B includes:

- 'Tempat Lahir' field with placeholder 'Kabupaten / Kota'.
- 'Lokasi Kelahiran' field with placeholder 'Nama Tempat Persalinan' and a 'Please fill out this field.' message.

 At the bottom, there are 'Simpan' (Save) and 'Kembali' (Back) buttons.

Figure 9. Display of Cover Letter Submission Page

d. Testing System

Testing an application aims to check whether a program is running properly or there are still errors that must be corrected so that the program created will be a program that has good quality (Ningrum et al., 2019). Testing This use method side - focused blackbox testing functionality especially on the input for ensure that all has passed the test as well as results output as expected. Black box testing is a software testing method that tests the functionality of the application as opposed to the internal structure or work (Putra et al., 2020). The results of the tests performed are in the form of the following table.

Table 1. System Testing Results

Tested page	Expected results	Conclusion
Login Form	Login is successful and displays the main page (<i>dashboard</i>)	<i>Valid</i>
Cover Letter Data Display Form	The system displays cover letter data	<i>Valid</i>
Cover Letter Application Input Form	The system will save the cover letter data and display the message "Data has been stored in the database "	<i>Valid</i>

4. CONCLUSION

Based on the results of the research and discussion above, several conclusions can be drawn that by using the PMD Desa Kuala II information system, you can submit a letter of introduction online where residents do not need to come to the village office directly. Residents can print the submitted certificate themselves. Regular, safe and better data storage because it is stored in the database. The system built is expected to facilitate the recording process, faster data search, more secure storage. It is expected that the Kuala II Village Management will be more attentive in conducting socialization / counseling to their villagers about the importance of digital media in this modern era, to help improve the correspondence system as a means of recording cover letter data for residents, so that fast and accurate citizen data information is available when needed by villagers.

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