JIPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)
Journal homepage: https://jurnal.stkippgritulungagung.ac.id/index.php/jipi
ISSN: 2540-8984
Vol. 10, No. 1, Maret 2025, Pp. 280-294

DEVELOPING OF A WEBSITE-BASED INFORMATION SYSTEM FOR DASA WISMA TO REALIZE THE HEALTHY INDONESIA PROGRAM WITH FAMILY APPROACH (PIS-PK)

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Article Info
Keywords: Dasa Wisma, PIS-PK, Website

Article history:
Received 13 October 2024
Revised 24 November 2024
Accepted 7 December 2025
Available online 1 March 2025

DOI :
https://doi.org/10.29100/jipi.v10i1.5924

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ABSTRACT
Dasa Wisma is a group of mothers consisting of 10 to 20 households in an urban village that holds important positions in the Family Welfare Empowerment (PKK) program to assist the community in considering family health. The Indonesian government has implemented various programs to provide healthcare for Indonesian people, one of which is the Healthy Indonesia Program with a Family Approach (PIS-PK). In Rancabolang Urban Village, the management of citizen data is still manual, which can hinder the performance of dasa wisma, making it ineffective and inefficient. This research aims to develop a website-based information system to assist dasa wisma in managing data, collecting recapitulated data, and exchanging information. The specifications of the information system are determined based on the Ministerial Regulation of the Republic of Indonesia No. 39 Year 2016 and interviews. The system is tested using the Black Box Testing method to ensure that the website works successfully. The User Acceptance Test conducted with users obtained a result of 90% (very good), demonstrating that the website functions according to user requirements. Testing using Wireshark to capture the average network traffic delay with the ITU-T G.1010 Quality of Service (QoS) standardization showed that the SIDALA website received a result of 1.06 seconds/page, which complied with the standard. The development of a website-based family health information system can increase the efficiency and effectiveness of health services, as well as facilitate reporting to related parties.

I. INTRODUCTION

The health status of a country is reflective of high-quality citizen empowerment. The Indonesian government has various programs to provide for the healthcare of Indonesian citizens, specifically through the Health Law No. 36 Year 2009 and the Healthy Indonesia Plan in the Ministry of Health's Strategic Plan 2015-2019 [1]. One of the programs is the Healthy Indonesia Program as Nawa Cita's fifth priority agenda with a goal to improving the quality of life for Indonesian people [2], [3]. The Healthy Indonesia Program with a Family Approach (PIS-PK) is a government health program that focuses on family health. PIS-PK emphasizes the importance of understanding the health status of each family member to obtain health services that suit their needs [4].

The City in Bandung has a total land area of 167,31 KM^2 consisting of 30 Sub-districts, 151 Urban Villages, 1.591 Neighborhood Associations, and 9.904 Neighborhoods. One of the largest sub-districts in Bandung City is Gedebage Sub-district with an area of 9,58 KM^2 [5]. In Gedebage Sub-district, there is a group of Family Welfare Empowerment (PKK) women who are active in fostering healthy families through the PIS-PK program. PKK is a national movement for women's empowerment to contribute to community development. Each urban village has a PKK group to assist the urban village in supporting population and regional development management with the help of dasa wisma women with 10 to 20 households [6], [7]. Rancabolang Urban Village is one of the four urban villages in Gedebage Sub-district. Rancabolang Urban Village has a dasa wisma that is responsible for collecting

data that must be noted, such as TP-PKK citizen data, citizen activity data, family data, etc. The data collection carried out by dasa wisma in Rancabolang Urban Village is still conventional using a notebook which makes the officer's work ineffective because of the many data that must be noted.

In this era of digitalization, rapid advancements of technology bring various benefits to the world of health. The main advancement of technology is the growth of knowledge and awareness about the importance of managing data into information [8]. Data management can be more efficient through computerized information systems. The information system is a solution to facilitate the implementation of the dasa wisma program in recording and reporting family health information. The problem of managing citizen data carried out by dasa wisma which is still done manually has an impact on service performance.

Digitalization of dasa wisma is one solution that can be implemented. Research by [9] offers a website-based information system that provides public information, village services, and tourist attractions in Baseh Village. Despite efforts to design a website-based information system, the digitization of dasa wisma notebooks is still done conventionally using Microsoft Word and Excel, which don't support real-time collaboration and data efficiency. Another study by [10] offers a website-based information system to assist posyandu in recording and reporting activities. This information system can replace manual management with digital to facilitate Posyandu Mandala 2. However, the use of PHP programming language without a framework makes system development and maintenance less efficient so that it can affect system reliability and scalability.

Based on the description above, this problem attracted the author's attention to study it further, resulting in the Dasa Wisma Rancabolang Information System (SIDALA). This system aims to improve efficiency and effectiveness in data management, health services, family health monitoring, and community empowerment. Through replacing manual recording methods with a computerized system, SIDALA is expected to reduce errors and data redundancies. SIDALA can be accessed anywhere so that people can easily find out health information, making it easier for health workers to make the right decisions. SIDALA also provides an effective feature to monitor the health status of each family member continuously, so that early intervention can be done if needed. This system can increase the active participation of dasa wisma mothers in health programs, strengthening their role as community health promoters. With a more structured data management, SIDALA is expected to improve community health and support the effective achievement of the Healthy Indonesia Program with a Family Approach (PIS-PK) goals.

II. RESEARCH METHOD

A. Problem Identification

This research discusses the problem of using manual methods in recording and recapitulating data, which complicates the work of dasa wisma workers and makes data management not effective and efficient. Data collection is needed to understand user and program needs. There are two methods used in the data collection process, which are:

1. Literature Study

Based on the Minister of Health Regulation of the Republic of Indonesia No. 39 Year 2016 Article 2 Section 1 regarding the Implementation of Healthy Indonesia Program with a Family Approach aimed to improve the health level of the community through family approach efforts. To achieve this goal, measures and priority areas are required. Therefore, it is certain that the measures taken have a significant impact in improving public health. Thus, programs outside the priority areas will not be ignored, but will be adjusted to the needs and available resources. There are 4 priority areas in the Indonesia Program with a Family Approach Article 2 Section 1, including Reduction of Maternal Mortality Rate and Infant Mortality, Reduction of Stunting Prevalence, Control of Communicable Diseases, and Control of Non-Communicable Diseases [1].

2. Interview

Data collection through interviews was carried out by asking directly to representatives of dasa wisma in Rancabolang Urban Village. The aim was to obtain information related to data completeness in the implementation of the Healthy Indonesia Program with a Family Approach (PIS-PK). The data obtained from these interviews is expected to provide a detailed description of the conditions in the field and the requirements that must be met in the development of SIDALA.

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B. Requirement Analysis

Requirement analysis is necessary for the system to work optimally. There are two types of requirements analysis, which are functional and non-functional requirements:

1. Functional Requirements

Describe the specifications that the system can do to achieve goals. In this research using a block diagram to describe the workflow of the website in the form of input, process, and output in the dasa wisma information system [11]. Block diagram in the design consists of an information homepage, the flow of managing citizen data entered by the dasa wisma, the flow of recapitulating citizen data to the urban village, and the flow of recapitulating citizen health data to posyandu which can be seen in Figure 1. Dasa Wisma can input all citizen data in Rancabolang Urban Village, Urban village can view the citizen recapitulation Rancabolang data, Posyandu can view the health of citizens recapitulation data in Rancabolang Urban Village to Posyandu.

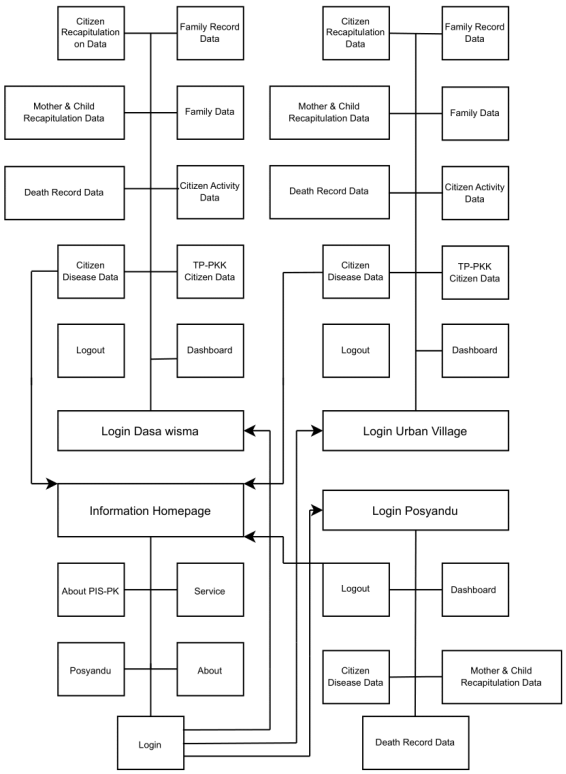

Fig. 1. Block Diagram

2. Non-Functional Requirements

Non-functional requirements describe the specifications needed in system design. By analyzing non-functional requirements, it can be known what software and hardware are needed in making and using the system [11]. The following are what non-functional needs are needed in a website-based dasa wisma information system:

- Hardware Requirements

  To run a website, there are minimum recommended hardware specifications for smartphones and laptops. For smartphones, a quad-core processor with a minimum speed of 1.4 GHz, at least 2 GB of RAM, and a screen with a resolution of 720 x 1280 pixels are recommended. A stable internet connection such as 4G or Wi-Fi is also required. Meanwhile, for laptops, a dual-core processor with a minimum speed of 1.6 GHz, at least 4 GB of RAM, and a screen of at least 1366 x 768 pixels are recommended. A stable internet connection can be made via Wi-Fi or Ethernet. By using these recommended devices, users can run the website with optimal performance.

- Software Requirements

  In conducting this research, software is needed that is used to support the design of a website-based information system. With the following specifications:

  a. Google chrome, firefox and edge as a browser to run the website.

b. Visual studio code is used as a text editor in making information systems.
c. The program language used is PHP (Hypertext Preprocessor) which is a programming language implemented with HTML (Hypertext Markup Language).
d. The framework used is Laravel, which is open source that can be used to build web applications in a more structured way.

C. System Implementation

The implementation of the SIDALA system involves the selection of information system development methods, system validation and verification, frameworks, deployment and website hosting in accordance with the needs of the designed system. This implementation is to ensure that each component is properly selected to maintain the performance, scalability and reliability of the system [11]. The following is an explanation of the implementation system needed, among others:

1. Waterfall Models

In this SIDALA design process, the waterfall method is used. The waterfall model has a systematic and sequential software approach, starting from system requirements analysis to implementation [12], as can be seen in Figure 2.

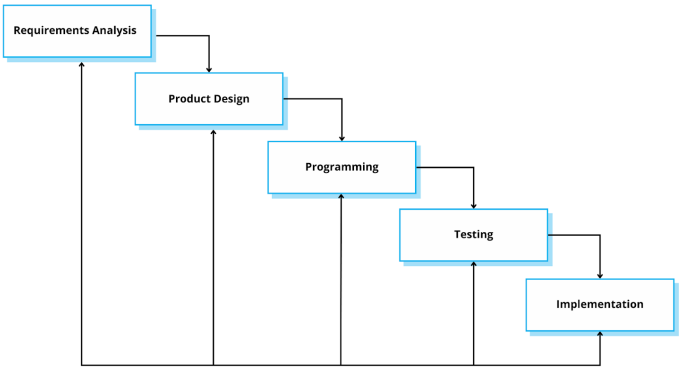

Fig. 2. Waterfall Models

The following are the stages in creating an information system using this model:

a. Requirements analysis is the stage for obtaining the necessary data from users to understand the needs of the system needed.
b. Product design is the implementation process of analyzing user needs by creating a program design.
c. Programming is the stage to implement the product design by creating the software needed by the user.
d. Testing is the stage to validate the system according to the results of the user needs analysis.
e. Implementation is the stage of using the website information system to help users.

2. Validation and Verification

To ensure the success of the SIDALA website, validation and verification needs to be done with software testing to cover all necessary aspects. Software testing is the process of executing the website program that has been developed. Various aspects of the website system will be tested to ensure its performance in accordance with the specifications and user needs. The following are the testing methods used on the SIDALA website.

a. Black Box Testing to identify obstacles such as errors that may appear on the SIDALA website.
b. Delay Testing aims to measure the quality of service provided to users when accessing the SIDALA website.
c. User Acceptance Test is a test conducted on Dasa Wisma, Urban Village and Posyandu end-users. Users will interact directly with the system and confirm whether the existing functions are in accordance with user needs.

3. Framework

A framework is a workspace that makes it easier to build an application or software. Frameworks provide various elements, instructions, and design patterns to speed up and simplify the development process [13]. The framework used in this research is the Laravel Framework. Laravel is an open-source web framework that is used to build web applications in a structured and dynamic manner. The selection of this framework is based on the MVC (Model, View, Controller) concept in Laravel, which separates the display (front-end) from data processing and control

(back-end). This separation facilitates continuous changes and maintenance for the needs of the SIDALA system [14].

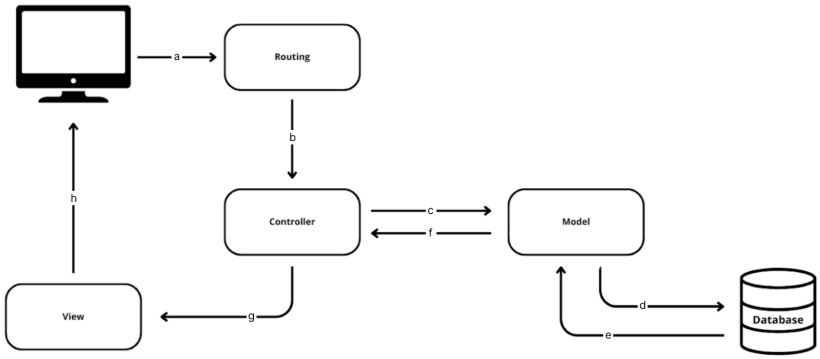

Fig. 3. Workflow in Laravel Framework

MVC (Model, View, Controller) is a programming architecture to separate the application logic and visual representation. Model is used to manage the data and logic of the application, View is used to display the model to the user, and Controller is used to handle user interaction and update the Model and View. Figure 3 is a workflow in Laravel framework. The explanation is as follows:

a. Users interacting with the browser page will send a request.
b. The request will be forwarded to the Laravel Routing system which will be accepted by the Controller to process the request.
c. If the Controller needs access to the Database, then the Controller will forward it to the Model.
d. The Model will interact with the Database, the action taken can be adding data, updating data, deleting data or retrieving data.
e. The Model gets data from the Database.
f. Then the data generated by the model will be sent back to the Controller to be forwarded directly to the View page.
g. Then the Controller will forward the data that has been obtained from the Model to the View.
h. The page is displayed on the browser page.

4. Deployment and Hosting Website

The deployment and hosting process is carried out to move the website from localhost to a server connected to the internet, so that SIDALA website can be accessed by users publicly [15]. In addition, researchers chose to use a web hosting service, IDCloudHost. IDCloudHost is a hosting service that provides a variety of services, including cloud hosting. For hosting the SIDALA website, the cPanel Basic Pro cloud hosting package is used. Moreover, SIDALA uses a domain to identify the website, making it easier for users to remember the site address. The domain used is an Indonesian Domain with the website name sidala.my.id.

III. Result And Discussion

In the implementation of the Dasa Wisma Rancabolang Information System (SIDALA), there are several web page interfaces designed to fulfill different user demands and access rights. The interface becomes an important part of providing information and facilitating user interaction with the system. The following are some of the interfaces that have been designed to fulfill user needs and access rights.

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ISSN: 2540-8984
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A. Home Page

Fig. 4. Home Page of SIDALA Website

In Figure 4 shows the Home Page is the main page of SIDALA that contains information about the explanation of the Healthy Indonesia Program with Family Approach (PIS-PK), Services, Posyandu and Login Menu.

B. Admin Login

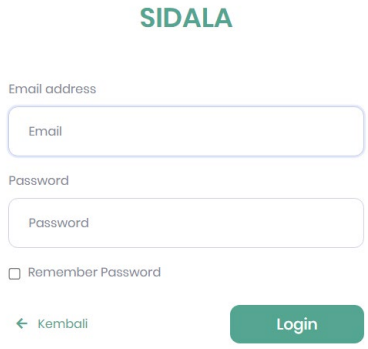

Fig. 5. Admin Login

In Figure 5 is the SIDALA login page with access for 3 admins, namely dasa wisma, urban village and posyandu admins. Each admin has different access rights in accordance with their respective roles. The dasa wisma admin is responsible for manage data that can add and delete citizen data, the urban village admin can receive, monitor, and print citizen recapitulation reports, and posyandu admin can receive, monitor, and print citizen health recapitulation reports.

C. Admin of Dasa Wisma

Dasa Wisma is responsible for collecting various citizen information data that must be noted by staff to complete data reporting to urban village and posyandu of Rancabolang. Dasa wisma admin has special permissions to add and delete citizen data. After the user successfully signed in to the dasa wisma admin website, it will display the dashboard page.

The dashboard contains information about the total population in Rancabolang Urban Village, consisting of citizens, male population, and female population. Then there is a total toddler diagram and citizen diagram in Rancabolang Urban Village. The following display of the dasa wisma admin dashboard can be seen in Figure 6. That dasa wisma has 8 forms that can be entered by the admin to input data on Rancabolang citizens, including:

- TP-PKK Citizen Data
- Citizen Activity Data
- Family Data
- Family Record Data

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- Citizen Recapitulation Data
- Mother & Child Recapitulation Data
- Death Record Data
- Citizen Disease Data

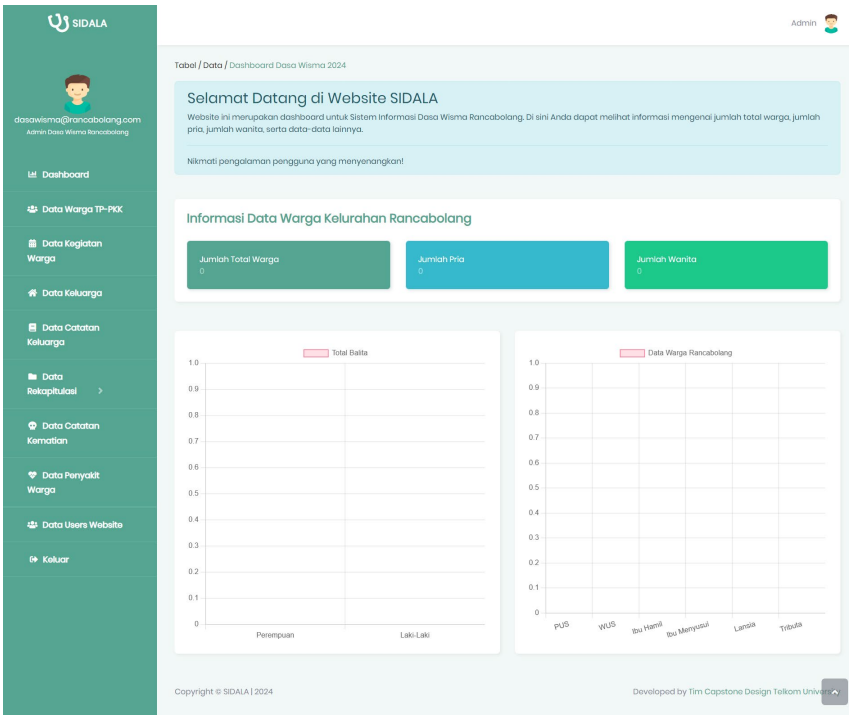

Fig. 6. Dashboard View of Dasa Wisma

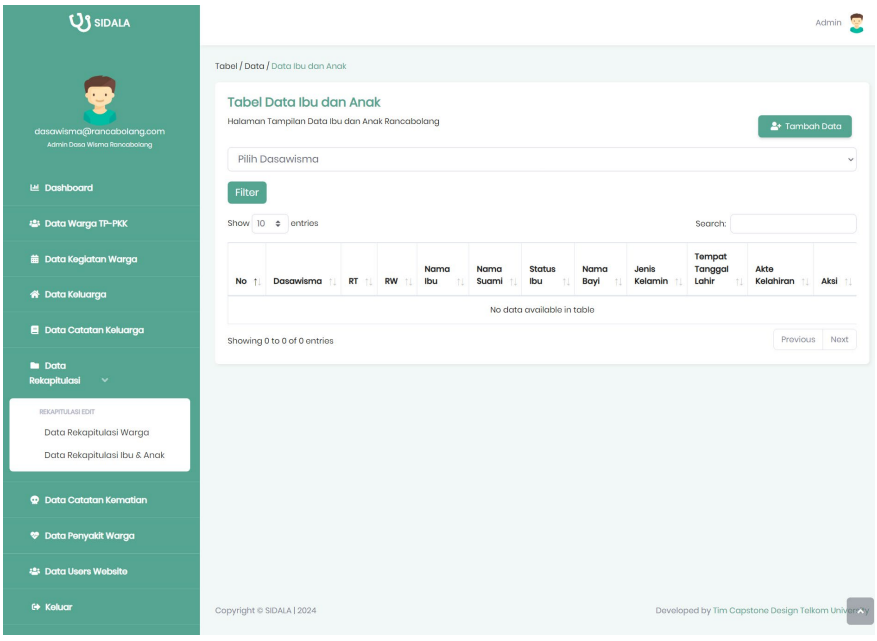

Fig. 7. Mother and Child Data View of Dasa Wisma

Figure 7 is the mother and child recapitulation data which is one of the forms that will be input by dasa wisma admin. In each form there arprre tables that will show the results of the input filled in by dasa wisma admin to find out the birth of babies, pregnant mother, childbirth, and postpartum. Dasa Wisma can input data by clicking add data in the upper right corner which can be seen in Figure 8.

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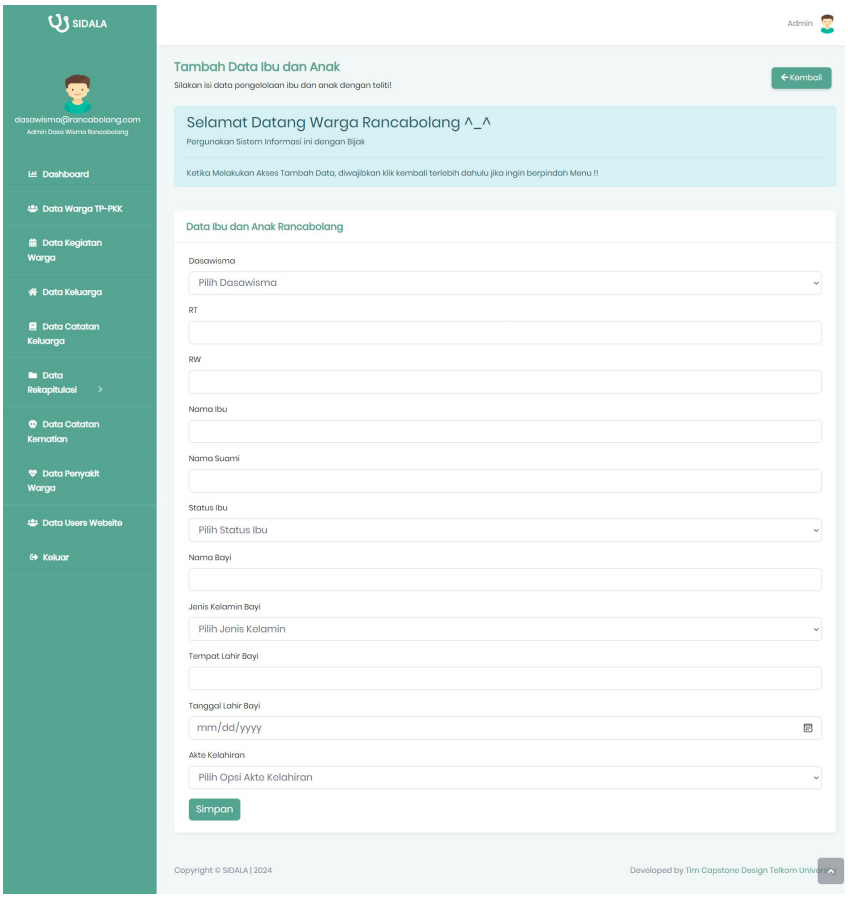

Fig. 8. Add Data View for Mother and Child Data of Dasa Wisma

D. Admin of Urban Village

Urban Village is responsible for receiving, monitoring, and printing the reports recapitulated in Rancabolang Urban Village that has been inputted by dasa wisma admin. The data received by the urban village will be recapitulated once a year to determine the overall condition of the citizens.

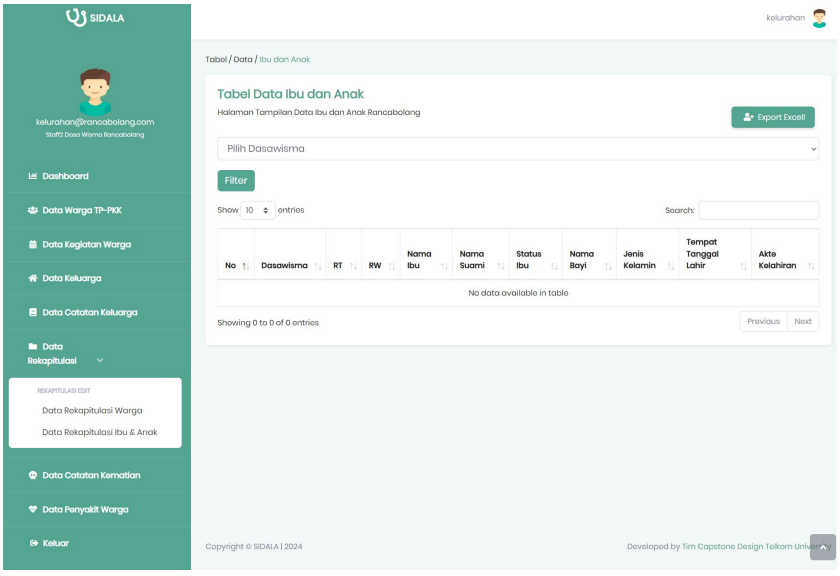

Fig. 9. Recapitulation of Mother and Child Data View of Urban Village

In Figure 9 is a view of the mother and child recapitulation on urban village admin. And then there is an export excell feature to print data into Microsoft Excell format which can be seen in Figure 10.

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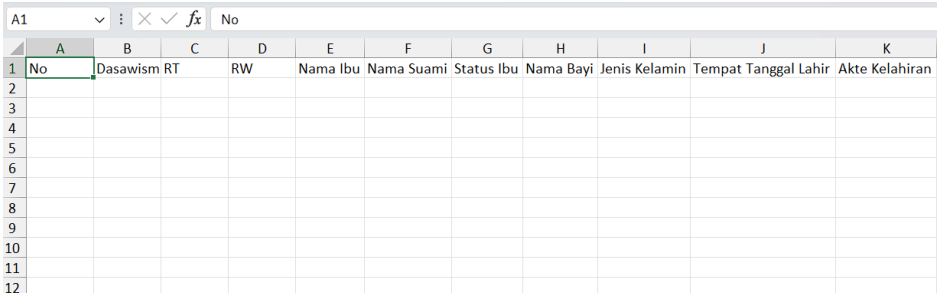

Fig. 10. View of Microsoft Excell Mother and Child Recapitulation Data for Urban Village

E. *Admin of Posyandu*

Similarly to urban village admin, posyandu admin is tasked with receiving, monitoring, and printing the reports recapitulated that has been inputted by dasa wisma admin. The data received by posyandu is recapitulated once every three months to determine the overall health condition of the citizens. Posyandu admin only recapitulation of mother and child data, death record data, and citizen disease data which can be seen in Figure 11. Each page on posyandu admin has the same export excell feature as the urban village admin to output data into Microsoft Excel can be seen in Figure 12.

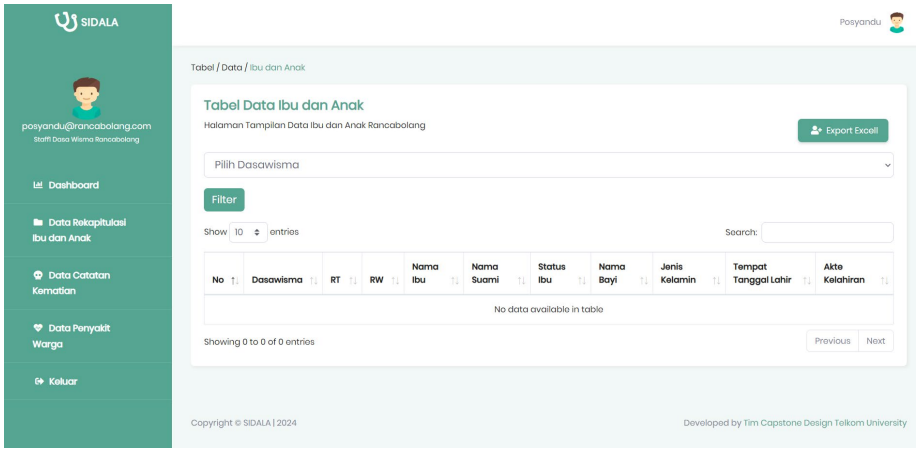

Fig. 11. Recapitulation of Mother and Child Data View of Posyandu

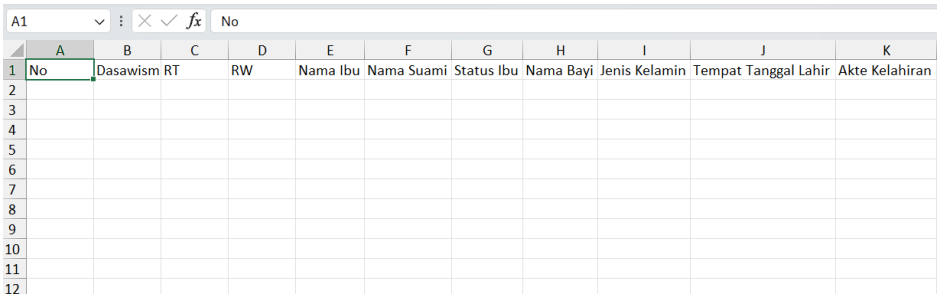

Fig. 12. View of Microsoft Excell Mother and Child Recapitulation Data for Posyandu

F. *Discussion*

To ensure the success of the SIDALA website, it is necessary to conduct software testing to cover all the necessary aspects. Software testing is the process of executing the website program that has been developed. In the development of this information system, there are 3 users, which are dasa wisma, urban village and posyandu. The system will test various aspects of the website to ensure that it performs well in accordance with the specifications and user requirements set. The following test methods are used on the SIDALA website.

G. *Black Box Testing Method*

Black Box Testing also known as behavioral testing is a software testing method that focuses on software functionality testing without examining the details of system programming code. Black Box Testing aims to identify obstacles such as errors that may appear on the SIDALA website [16]. To ensure the quality and reliability of the SIDALA website, black box testing was tested 30 times on each available feature. The purpose of this testing

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is to identify and resolve defects or errors in functionality, as well as ensure that each feature functions in accordance with predetermined specifications. By this method, the SIDALA website is expected to operate optimally and provide a good user experience. The following are the test results using the black box testing method.

TABLE I
BLACK BOX TESTING OF DASA WISMA USERS

Features	Test Case	Expected Outcome	Testing Status
Login	User enters the correct username and password	The system views the dashboard of Dasa wisma user	Success
	User enters the wrong username and password	The system gives an error message	Success
Logout	User clicks logout	The system views the information home page	Success
Dashboard	User accesses the dashboard	The system views the dashboard	Success
TP-PKK Citizen Data	User accesses TP-PKK citizen data in the system	The system views the TP-PKK citizen data	Success
	User adds TP-PKK citizen data in the system	The system successfully adds TP-PKK citizen data	Success
	User deletes TP-PKK citizen data in the system	The system successfully deletes TP-PKK citizen data	Success
Citizen Activity Data	User accesses the citizen activity data in the system	The system views the citizen activity data	Success
	User adds citizen activity data in the system	The system successfully adds citizen activity data	Success
	User deletes citizen activity data in the system	The system successfully deletes citizen activity data	Success
Family Data	User accesses the family data in the system	The system views the family data	Success
	User adds family data in the system	The system successfully adds family data	Success
	User deletes family data in the system	The system successfully deletes family data	Success
Family Record Data	User accesses the family record data in the system	The system views the family record data	Success
	User adds family record data in the system	The system successfully adds family record data	Success
	User deletes family record data in the system	The system successfully deletes family record data	Success
Citizen Recapitulation Data	User accesses the citizen recapitulation data in the system	The system views the citizen recapitulation data	Success
	User adds citizen recapitulation data in the system	The system successfully adds citizen recapitulation data	Success
	User deletes citizen recapitulation data in the system	The system successfully deletes citizen recapitulation data	Success
Mother & Child Recapitulation Data	User accesses the mother and child recapitulation data in the system	The system views the mother and child recapitulation data	Success
	User adds mother and child recapitulation data in the system	The system successfully adds mother and child recapitulation data	Success
	User deletes mother and child recapitulation data in the system	The system successfully deletes mother and child recapitulation data	Success
Death Record Data	User accesses the death record data in the system	The system views the death record data	Success
	User adds death record data in the system	The system successfully adds death record data	Success
	User deletes death record data in the system	The system successfully deletes death record data	Success
Citizen Disease Data	User accesses the citizen disease data in the system	The system views the citizen disease data	Success
	User adds citizen disease data in the system	The system successfully adds citizen disease data	Success
	User deletes citizen disease data in the system	The system successfully deletes citizen disease data	Success

TABLE II
BLACK BOX TESTING OF URBAN VILLAGE USERS

Features	Test Case	Expected Outcome	Testing Status
Login	User enters the correct username and password	The system views the dashboard of Dasa wisma user	Success
	User enters the wrong username and password	The system gives an error message	Success
Logout	User clicks logout	The system views the information home page	Success
Dashboard	User accesses the dashboard	The system views the dashboard	Success
TP-PKK Citizen Data	User accesses the TP-PKK citizen data	The system views the TP-PKK citizen data	Success
	User accesses export excell of TP-PKK citizen data	The system views Microsoft Excell of TP-PKK citizen data	Success
Citizen Activity Data	User accesses the citizen activity data	The system views the citizen activity data	Success
	User accesses export excell of citizen activity data	The system views Microsoft Excell of citizen activity data	Success
Family Data	User accesses the family data	The system views the family data	Success
	User accesses export excell of family data	The system views Microsoft Excell of family data	Success
Family Record Data	User accesses the family record data	The system views the family record data	Success
	User accesses export excell of family record data	The system views Microsoft Excell of family record data	Success
Citizen Recapitulation Data	User accesses the citizen recapitulation data	The system views the citizen recapitulation data	Success
	User accesses export excell of citizen recapitulation data	The system views Microsoft Excell of citizen recapitulation data	Success
Mother & Child Recapitulation Data	User accesses the mother and child recapitulation data	The system views the mother and child recapitulation data	Success
	User accesses export excell of mother and child recapitulation data	The system views Microsoft Excell of mother and child recapitulation data	Success
Death Record Data	User accesses the death record data	The system views the death record data	Success
	User accesses export excell of death record data	The system views Microsoft Excell of death record data	Success
Citizen Disease Data	User accesses the citizen disease data	The system views the citizen disease data	Success
	User accesses export excell of citizen disease data	The system views Microsoft Excell of citizen disease data	Success

TABLE III
BLACK BOX TESTING OF POSYANDU USERS

Features	Test Case	Expected Outcome	Testing Status
Login	User enters the correct username and password	The system views the dashboard of Dasa wisma user	Success
	User enters the wrong username and password	The system gives an error message	Success
Logout	User clicks logout	The system views the information home page	Success
Dashboard	User accesses the dashboard	The system views the dashboard	Success
Mother & Child Recapitulation Data	User accesses the mother and child recapitulation data	The system views the mother and child recapitulation data	Success
	User accesses export excell of mother and child recapitulation data	The system views Microsoft Excell of mother and child recapitulation data	Success
Death	User accesses the death record data	The system views the death record data	Success

Features	Test Case	Expected Outcome	Testing Status
Record Data	User accesses export excell of death record data	The system views Microsoft Excell of death record data	Success
Citizen Disease Data	User accesses the citizen disease data	The system views the citizen disease data	Success
	User accesses export excell of citizen disease data	The system views Microsoft Excell of citizen disease data	Success

The black box test results show that all website features, including user login, resident data management, and data export, run well according to the predefined specifications. No significant bugs or errors were found that interfered with the main functions of the system. However, it should be noted that there may be performance issues related to browser availability and compatibility, as well as loading factors due to network conditions that may affect the overall user experience. Successful black box testing shows that SIDALA can improve work efficiency and data accuracy at the level of dasa wisma, urban village, and posyandu. With this system, data management becomes faster and more precise, thus supporting better data retrieval and more responsive services for the community.

H. User Acceptance Test (UAT) Method

User Acceptance Test is a test conducted by end-users who are Dasa wisma, Urban Village and Posyandu that directly interact with the system and make sure that the functions are in accordance with user needs and can be accepted by users. There are four categories tested, including Functional Suitability, Performance Efficiency, Usability, and Reliability. The following are an explanation of several aspects of testing that were asked to users:

1) Functional Suitability

Testing the Functional Suitability aspect to evaluate the ability of the website to run existing features according to the requirements of users based on predetermined specifications.

2) Performance Efficiency

Testing the Performance Efficiency aspect to assess the relative performance level of the website based on available system resources in specific conditions [17].

3) Usability

Testing the Usability aspect to measure the quality of the website interfaces used by users, considering the criteria of effectiveness, efficiency, and satisfaction [18].

4) Reliability

Testing the Reliability aspect to measure the ability of the website to run features successfully under various conditions during certain periods of time [19].

TABLE IV
USER ACCEPTANCE TEST (UAT) FORM RESULTS

Aspect	Questions	Frequency of Answer					Score	Percentage
		1	2	3	4	5		
Functional Suitability	1	0	0	0	11	19	139	93%
	2	0	0	0	14	16	136	91%
	3	0	0	0	16	14	134	89%
Performance Efficiency	4	0	0	2	16	12	130	87%
	5	0	0	0	12	18	138	92%
	6	0	0	0	12	18	138	92%
Usability	7	0	0	0	14	16	136	91%
	8	0	0	2	14	14	132	88%
	9	0	0	0	16	14	134	89%
	10	0	0	1	16	13	132	88%
Reliability	11	0	0	0	16	14	134	89%
	12	0	0	2	13	15	133	89%
Average								**90%**

Table 4 is a calculation of the frequency of answers, scores, and percentages of the respective aspects of the

question. The following is the formula for calculating the percentage of testing shown in Equation 1 [20].

$$\text{Percentage} = \frac{\text{Score}}{\text{Maximum Score}} \text{ x } 100\% \quad (1)$$

Based on the results of the calculation in Equation 1, the Functional Suitability aspect gets the highest percentage, which is 93%, the functionality of the system is very good and can be accepted by users. The Performance Efficiency aspect gets a pretty good percentage, above 87%, but there is space for improvement to provide a more optimal experience for users. In addition, the Usability aspect gets the highest percentage, which is 91%, which means that users strongly agree that the system is easy to operate. The availability of features and appearance between pages received the lowest percentage in the Usability aspect, which is 88%. This indicates that the users think there are features that haven't completely covered the specific needs of the users or there is a preference for more variety and innovation in the design of the display between pages. The last aspect is the Reliability aspect which has the same percentage, which is 89%, where users very rarely have problems or errors, and the add and delete features work well on the system. These results can be the basis for the development team to make repairs and improvements to aspects that still need to be upgraded, such as Performance Efficiency to increase overall user satisfaction.

Table 5 shows information about the grouping of percentage values [21]. From these results, it can be concluded that the SIDALA website obtained an average score of 90% with the description "Very Good". This score reflects a high level of satisfaction in various aspects of testing, including user experience, system performance, reliability, and satisfaction with existing features. Therefore, the SIDALA website is declared feasible and able to provide all user needs, and well received by users.

TABLE V
PERCENTAGE DESCRIPTION

Description	Percentage
Very Bad	0% - 20%
Bad	21% - 40%
Enough	41% - 60%
Good	61% - 80%
Very Good	81% - 100%

The results of the UAT showed that users found the system very helpful for dasa wisma in entering data, as well as for the urban village and posyandu in viewing the recapitulation report. However, some users suggested adding new features to improve the system's functionality in future development. By adding these features, it is hoped that this system can continue to grow and fulfill more comprehensive user needs.

I. ITU-T G.1010 Quality of Service (QoS) Standardization

Quality of Service (QoS) is a method for measuring service performance that is used to assess the level of user satisfaction. In this testing phase, delay (latency) data is collected when accessing the SIDALA website. Delay (latency) is the time taken to process data or the duration required for data to move from the point of origin to the point of destination. The ITU-T G.1010 standard is a standard used to measure website service delay created by the International Telecommunication Union for End-user multimedia. Standardization of delay (latency) parameters can be seen in Table 6 [22].

TABLE VI
ITU-T G.1010 STANDARDIZATION

Parameters	Delivery Data
Delay	Preferred <2 second/page Acceptable <4 second/page

Delay testing is run on Wireshark. The step of testing by accessing the SIDALA website and capturing filters on Wireshark with the command "ip.addr==192.168.24.163 && ip.addr==103.55.39.107 && tcp" with the connection to the network. Data on wireshark will be exported and the average delay calculation of the test is

carried out. This test was carried out 30 times, as can be seen in Figure 11. This test is divided into three time periods, morning (06:00 - 12:00), afternoon (12:00 - 18:00), and evening (18:00 - 24:00) with each period tested 10 times. The purpose of the test is to determine the delay of the SIDALA website in accordance with the ITU-T G.1010 standard.

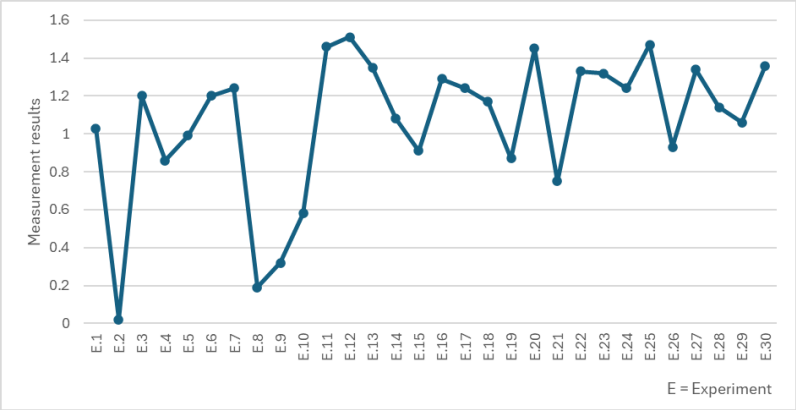

Fig. 13. Delay Testing Experiment Results Graph

Based on previous research [23], there is an average delay of 1.27546 seconds. This occurs because the server takes longer to handle an increasing number of user requests, resulting in a longer access queue on the server. For the SIDALA website, test results show that the average delay of 30 tests is 1.06 seconds, which meets the QoS standards as shown in Table 7. Thus, the results are expected to provide an overview of the performance of the SIDALA website at various times and help in improving service quality.

TABLE VII
DELAY (LATENCY) AVERAGE ITU-T G.1010
QUALITY OF SERVICES (QOS) STANDARDIZATION USING WIRESHARK

Results	Description
1.06 second/page	Standard Compliant

IV. CONCLUSSION

The research successfully developed a website-based information system that aims to help Dasa Wisma in managing data, collecting recapitulated data, and exchanging information in Rancabolang Urban Village. The results of testing using the Black Box Testing and User Acceptance Test (UAT) methods show that the developed system can fulfill user needs in accordance with the specifications set based on the results of interviews and the Regulation of the Minister of Health of the Republic of Indonesia Number 39 of 2016. Measurement of access delay to the SIDALA website meets the ITU-T G.1010 Quality of Service (QoS) standard which is important to ensure that the system can provide responsive and efficient services to users. Further research is encouraged to explore other aspects to ensure that all user needs, and service quality improvements are continuously implemented, to provide greater benefits to the Healthy Indonesia Program with Family Approach (PIS-PK).

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