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Community Service Monitoring Information System at The Level of Community Harmony of Citizens

Romario Firera[1], Akbar Iskandar[2*]

[1-2]*Department of Informatics, Universitas Teknologi Akba Makassar, Makassar, Indonesia*

Abstract

A website-based community service information system can improve the performance of sub-district, village, community units and neighborhood units so that it can speed up report generation and can also improve the quality of better services because it is faster and without queuing. This research is to design and build an Information System for the Rukun Warga (RW) Service at Perumnas Antang Blok 10 by using the System Development Life Cycle (SDLC) method and the Multi-Objective Optimization On the Basis Of Ratio Analysis (MOORA) method that is able to provide effective services. and efficient to citizens and able to facilitate in supporting decision making acceptance of social assistance. The results of the study show that the Community Service Information System (RW) at Perumnas Antang Blok 10 can help provide effective and efficient services to residents and is able to facilitate decision making in receiving social assistance. Based on the results of the respondent's assessment through the distribution of questionnaires, the Information System for the Rukun Warga (RW) at Perumnas Antang Blok 10 is very good to use because it meets the final score criteria of 88%.

Keywords: Rukun Warga, Decision support system, Service information system.

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Introduction

The development of information technology cannot be separated from the rapid development of computer technology, because the computer is a medium that can provide convenience for humans in completing a job(Wu et al., 2018);(Li & Chan, 2019). Changes and dynamics of society are getting faster along with the times and technology so that it requires quality information that is accurate, fast and precise. Rukun Warga or RW is part of the work of the lurah and is an institution formed through deliberation of the RT management in its working area determined by the Village Government or Lurah(Dewi, 2019). While the Rukun Tetangga or RT is an institution formed through local community consultations in the context of government and community services determined by the Village Government or Lurah(Sudrajat et al., 2021).

However, in carrying out their duties as RW and RT, they often experience problems because the service process to residents is carried out manually, therefore it takes a long time, especially if residents come together to make the service process less than optimal. From the residents' point of view, this has had a significant impact, residents are not well informed, service requests are disrupted and the distribution of residents' aspirations cannot be accommodated. Apart from the problem of service to residents, there is another problem, namely the system of receiving social assistance, where in the process of determining recipients of social assistance there is currently no sorting of residents who apply for social assistance.

The design of the system built using the Waterfall or System Development Life Cycle (SDLC) Method is a sequential software development process, where the process continues to flow from top to bottom (such as the waterfall concept) with the stages including needs analysis, design and modeling, implementation, testing and maintenance(Salve et al., 2018);(Kramer, 2018). The drawback of this service information system is that it still requires several additional features

* Corresponding author.
E-mail address: akbariskandar@akba.ac.id (Akbar Iskandar)

such as the citizen complaint feature, the citizen activity feature, the social assistance support feature and the information feature.

The Multi Objective Optimization by Ratio Analysis (MOORA) method is used in decision making(Arabsheybani et al., 2018). The initial stage in building the system is by planning and selecting, analyzing, designing, implementing and operating which aims to be able to provide information to residents related to activities to be held or appeals to residents, number of residents, providing cover letter submission services, handling complaints. and other administration. Meanwhile, the use of the Multi-Objective Optimization by Ratio Analysis (MOORA) method will focus on the decision support system for social assistance recipients. The way this method works is to give weight to each specified criterion(Dabbagh & Yousefi, 2019).

Rukun Tetangga (RT) and Rukun Warga (RW) Neighborhood units and neighborhood associations are community institutions or institutions formed by the community according to their needs and are partners of the village government and lurah in empowering the community. One of the organs that is seen as effective in bridging citizen participation is the Rukun Tetangga(Zaina & Wicaksono, 2019). The duties of the RT/RW are population data collection and government administration services, maintaining security, order and harmony among citizens, generating ideas in the implementation of development by developing aspirations and genuine self-reliance of the community and driving self-help mutual assistance and community participation in its territory.

The management of social institutions is determined on the condition that they are Indonesian citizens, are local residents, have the will, ability and concern and are elected by deliberation and consensus. The working relationship between community institutions and the village government is partnership, consultative and coordinating, while the relationship with other social institutions is coordinating and consultative. In carrying out their duties, RT/RW cannot work alone but must foster good communication and cooperation with their citizens. In this case, if the RT/RW management has high mobility due to the dual roles they carry, namely as the head of the family and the RT/RW administrator, a communication media is needed that can bridge the RT/RW with residents so as to create a conducive environment.

The Multi Objective Optimization by Ratio Analysis (MOORA) method is the method introduced. This relatively new method was first used by Brauers in a multi-criteria decision. The MOORA method has a level of flexibility and ease of understanding in separating the subjective part of an evaluation process into decision weight criteria with several decision making attributes(Karpen et al., 2020);(Limbong et al., 2018). The MOORA method is easy to understand and flexible in separating objects to the evaluation process of decision weight criteria.

Based on the explanation of the background of the problem, a solution is needed, namely a system that is able to help provide effective and efficient services to residents in order to minimize service delays and a decision support system is also needed in order to sort out residents who apply for social assistance, especially services. Residents (RW) at Perumnas Antang Block 10 in the city of Makassar. Therefore, a study was carried out to design a system that was able to provide solutions to the problems described previously. With this system, it will be able to provide effective and efficient services to residents and be able to sort out residents who apply for social assistance.

Method

The system design is built using the Waterfall Method while the decision-making method uses multi-objective optimization by ratio analysis (MOORA) which will focus on the decision support system for social assistance recipients(Karpen et al., 2020);(Hanifatulqolbi et al., 2019). The decision-making criteria in this system, is a measure that explains the basis of the assessment, while social assistance is the provision of assistance in the form of money/goods from the local government to individuals, families, groups and/or communities that are not continuous and selective. While the testing method is done by using BlackBox testing. BlackBox testing is used as a tester of special functions in software applications that have been created(Koroglu et al., 2018);(Supriyono, 2020). System testing is carried out in order to test the performance of components in the implemented system.

The software needed to design the system are:

a. Windows operating system
b. Sublime text
c. MySQL
d. Google Chrome/ mozilla firefox
e. Xampp

Required information needs:

a. RT/RW resident data
b. RT/RW management data
c. RT/RW document
d. Citizen Agenda
e. Criteria for receiving social assistance

The concept of system design is to see how the description of a system will be formed or built with a detailed process so that we know where the system was originally formed. The concept can be described as a Use case diagram as follows:

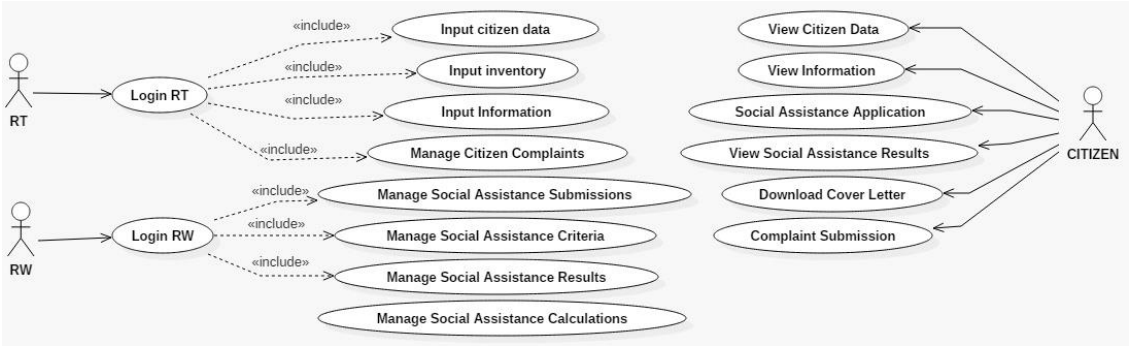

Figure 1. use case diagram

Figure 1 describes the system users starting from the neighborhood unit (RT), community unit (RW) and the community. Furthermore, the RW logs in, inputs RT/RW management data, verifies cover letters, verified BANSOS, to manage citizen complaints, and finally residents can view citizen data, submit cover letters, submit BANSOS, complaints, and see additional information.

Results and Discussion

Result

Social assistance is assistance that is much awaited and expected by people in need, many sources of social assistance provided can be directly from the government or from social organizations that are legal entities which are directly distributed to people in need. The social service is an implementing element of the government in the field of community social welfare(Specht & Vickery, 2021). Social services at this social service also include social protection, sponsorship for orphans and the elderly, youth youth development and social organization development. ,

As is known, Indonesia currently has a number of social assistance programs. For example, the Family Hope Program (PKH), Rice for Prosperous People (Rastra), the Smart Indonesia program and the national health insurance program(Purnomo, 2022). Many studies highlight the large value of social assistance distribution which does not provide the benefits as promised to the community. A number of social assistances were also judged not to be timely because they were given too early or too late, with the system that had been developed being able to assist government auxiliary agencies in serving the community, especially in the research locations. The results of system design can be seen as follows:

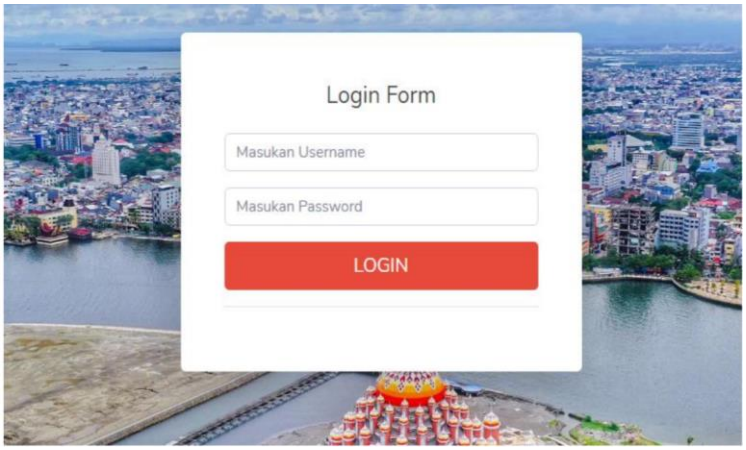

Figure 1. Login form

The login page is a form that appears for admins and users to enter the system, this login is used for security so that not all can access the application.

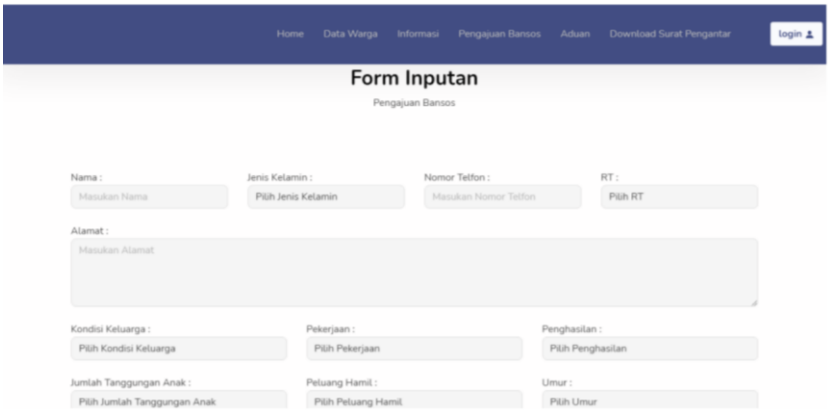

Figure 2. Social assistance application input form

Figure 2 shows instructions for residents who will apply for social assistance and will be directed to fill out an input form for applying for social assistance. The following steps after filling out the application form, the citizen data will be sent to each RT for data verification as shown in Figure 3.

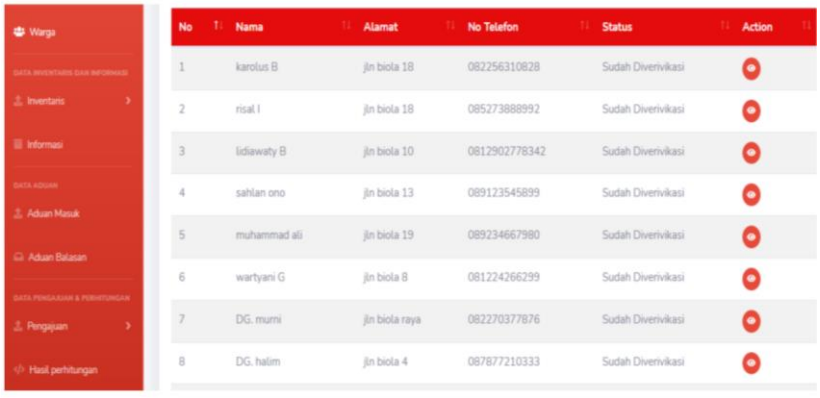

Figure 3. RT performs data verification

After the citizen data has been successfully verified by the respective RT, the citizen data will be automatically sent to the RW for stage 2 verification. After the citizen data has been successfully verified by the RW. Then a calculation process will be carried out for the data of residents who have applied for social assistance, at this step it will be determined the number of residents who receive recommendations for social assistance in accordance with the amount of the aid quota that has been determined.

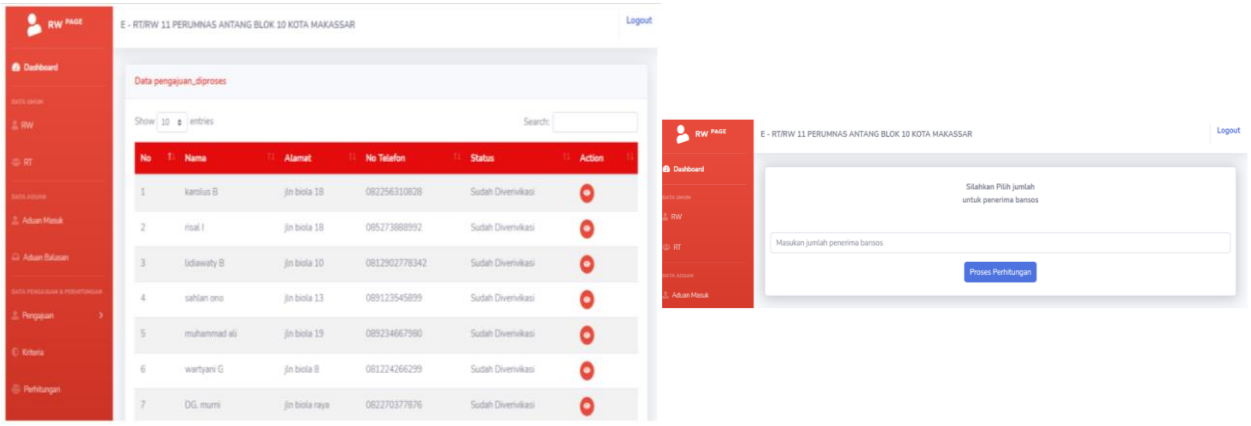

Figure 4. RW performs verification and the system analyzes recipient criteria

After the process of calculating the residents' data is successful, the results will appear on the calculation results menu, select "action" for the details of the results displayed as many as 20 residents. The calculation page is a menu that will display the calculation process for social assistance. On this menu page, the RW will determine the number of residents who will receive social assistance in accordance with the available social assistance quota, the calculation is carried out based on the criteria data and the weight value for each criterion. Furthermore, the results of the calculation are the names of residents who will receive social assistance with a recommendation status meaning that they can receive social assistance and non-recommendation means that they cannot receive social assistance.

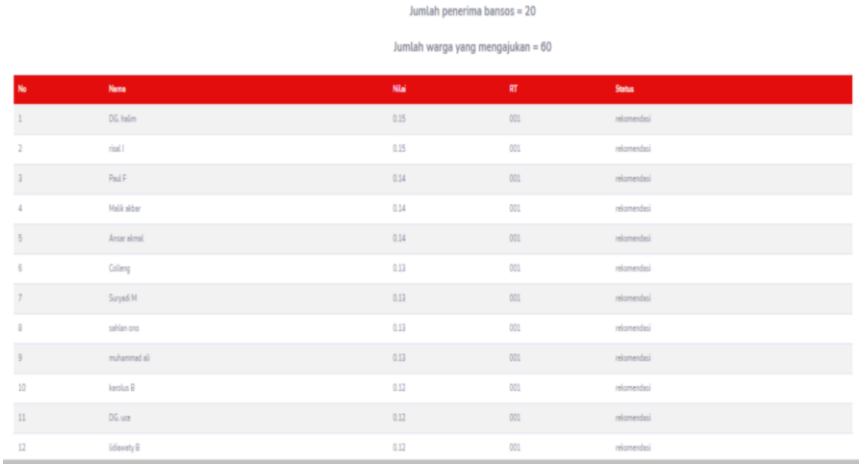

Figure 5. System calculation results

The results of testing the system as a whole appear that it has met the criteria for a system that can be used or implemented on the object of research. System testing is one of the important things in the era of software development. Testing this device using BlackBox testing as a tester of special functions in software applications that have been created. System testing is carried out in order to test the performance of components in the implemented system. The main function of this test is to ensure that the components of the existing system are in accordance with expectations.

Discussion

Based on the results of the research that has been discussed previously, it has described the results of the research in its entirety, although the display of the residents' menu page is not included in its appearance, but the menu has become an integral part of the system. where the function of this menu is a menu that will display citizen data and there is also an action that is used to edit citizen data if there is an error and there is a feature to add citizen data if there are new residents who want to be uploaded to the system. In addition, an information menu page is also available, which is a menu that will display information on residents' activities. Likewise with the cover letter download menu where a menu has been prepared which when clicked will automatically download the RT and RW cover letters.

all results of system design have been tested with black box and also tested by comparing the results of the calculation of the Moora method manually using Microsoft Excel with calculations performed using the system. The purpose of this test is to show that the results of the system calculations are in accordance with the results of calculations carried out manually. Based on respondents' responses to the developed system, the average percentage of respondents' scores for the questionnaire questions was 88% with very good criteria.

Conclusions and Suggestions

Conclusions

Based on the results of the research, the tests and discussions that have been carried out can provide an overview of effective and efficient assistance services to residents and are able to facilitate decision-making regarding who receives the right social assistance. In addition, based on respondents' responses, information was obtained that the information system for this community service was very well used with a final score of 88%.

Suggestions

Based on the conclusions that have been described previously, this Rukun Warga Service Information System still needs to be in the development stage. Especially in the part of the system that can display data for residents who have died, data for elderly residents and data for residents who have moved. In addition, it also needs to be developed towards a mobile-based direction equipped with chat bots or provide additional notifications via email or sms gateway.

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