Android-Based Public Complaint Service System in Malimongan Tua Sub-district, Makassar

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Abstract

The problem that occurs in the Public Complaints Service System in Malimongan Tua Village is the absence of a public complaint service system. Therefore, the researcher offers a solution to this problem by designing and implementing an Android-based public complaint service system. The purpose of this study is to design and implement an Android-based public complaint service system. Data were obtained through field research, library research, and interviews. The waterfall method is used in system development. The results of the study indicate that this data was obtained through observation, interviews, and library studies. The waterfall method is used in system development. The results of the study indicate that (the design and manufacture) of the Public Complaint Service System in Malimongan Tua Village, black box system testing ran well, and the results of User Acceptance Testing (UAT) testing on several respondents (Villages and Users) related to the use of the Android-based Public Complaint Service System Optimization application in Malimongan Tua Village, Makassar. In addition, the results of this study have been implemented in the form of community service, where this application helps the people of Malimongan Tua Village to convey their complaints more easily and efficiently, as well as improve the village government's response to problems faced by the community, it is concluded that this application is very suitable for use with a final score of 87.4%.

Keywords: Application; Complaints; Community; Urban Village; Android

Introduction

Improving public services is one way to reform bureaucracy and make it easier for the general public to participate in the development of optimal governance, one way is through increasingly developing and advanced technology (Rahmadana et al., 2020; Sepriano et al., 2023). Public complaints are crucial for the government to find out how successful it is in carrying out activities. Because the purpose of public complaints is to improve deficiencies in previously completed tasks, public complaints are a crucial component for regional agencies (Ulum, 2018; (Marto, 2021; Pambudi & Hidayat, 2022).

When making decisions, information is very important for individuals and government organizations.(Cholik, 2021). With the speed of information spreading throughout the world, all government agencies are now required to provide answers to community problems and any information they have accurately and quickly (Wulandari, 2021). The fundamental problem is that these complaints are still manual and carried out by members of the public, which means that the time spent is inefficient (Rachman, 2021). It is difficult for the community to communicate their goals or complaints regarding disturbances in their environment to government organizations. In addition to serving as a means to monitor the effectiveness of government entities, community complaints are a means to engage in the development of their environment (Sansena, 2021; Nugraha et al., 2021). In order to assess policies and regulations that have been developed or implemented, to identify problems in society efficiently, quickly, and up-to-date, and to immediately provide solutions, reports, and aspirations of the community can be used as input.

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Kelurahan is a place where the Lurah works as a regional apparatus of the Regency or City. The Lurah who is responsible for the Kelurahan is a Civil Servant (PNS) (Martins & Setyawan, 2019; Sari, 2021; Princess, 2022; Wikipedia, 2024). The urban area is where the Kelurahan is located. The responsibility for coordinating government, development, and administrative matters under its jurisdiction lies with the Kelurahan (Satria, 2015; Geography, 2024).

Society consists of people who live together in one location and engage in social interaction. This group of people has certain traditions, standards, and guidelines that gradually shape its culture (Aris, 2021; Prasetyo & Irwansyah, 2020; Sulfan and Mahmud, 2018; Wikipedia, 2024c). Due to a lack of knowledge about the available facilities and infrastructure, the community may have difficulty in filing reports. In terms of government, public complaints can indicate whether public services are adequate or not, but some individuals are still unwilling and afraid to report directly (Lindawaty et al., 2018; Nurchotimah, 2021; Febratama et al., 2023).

Public Complaints are a step to report things that are not in accordance with the community where they live (Made et al., 2015; Putra, 2022). When service customers are not satisfied with the services they receive from the three service providers, they take the initiative to file a complaint. The problem faced by the Community when making a Complaint is that the Community must go through an interview process if they want to make a complaint (Firmansyah et al., 2020; Haspo & Frinaldi, 2020; Zulfikar et al., 2021). The manual Public Complaints System has the risk of delays in processing complaints (Santoso & Suwitri, 2017; Adypurnawati & Hariani, 2019). People usually complain on social media these days. Because of this unavoidable situation, problems often arise before the organizers can resolve them. So the author designed an android-based application to accommodate complaints from the public, which is expected to help the public in making complaints.

 Malimongan Tua is a sub-district located in Wajo District, Makassar, South Sulawesi (Ainun, 2023; Wikipedia, 2024b). To make a complaint, the community needs to come directly to the village office to make a complaint, and the village office will conduct an interview process about the matter to be complained about and request the documents needed to process the Community Complaint. If the documents needed to process the complaint are incomplete, the community must complete the documents, each data from the complaint will be manually re-inputted into the computer, resulting in a delay in the complaint process submitted to the village office.

This research is in line with the research Rahmatullah & Afriyudi (2021) Development of Android-Based Public Service System Application (Case Study: Payaraman District, Ogan Ilir). The results of the study show that residents of Payaraman District can use the application to submit a letter request containing identity information such as KTP and permits or SK, which will later be sent back via the admin web to the application according to the residents' requests. With this, the author takes the title "Optimization of Android-based Public Complaint Service System in Malimongan Tua Village, Makassar" which can make it easier for the public to make complaints, make time more efficient, and find out information on complaints made by the public to the village.

Method

Data collection is carried out methodically and consistently to obtain the information needed in the research (Alhamid & Anufia, 2019; Anufia & Alhamid, 2019).Data collection techniques include direct observation at the Malimongan Tua Village Office, interviews with village officials, literature studies from related sources, and data findings obtained from interviews. Observations were conducted directly to systematically record symptoms in the research object. Interviews involved direct questions and answers with village officials to obtain relevant information. Literature studies were conducted by studying various sources such as related websites to support the search for information on optimizing the Android-based public complaint service system in Malimongan Tua Village. Data findings were obtained through interviews with village staff.

This research method is also applied in the form of community service, where the service method is carried out with a lecture model or application presentation that will be applied to the village head's office. Before implementing the application, the team first conducted observations, literature studies, and interviews to obtain in-depth information related to the service location and adjust the related theories. The service location was carried out in Malimongan Tua Village, Wajo District, Makassar City, South Sulawesi, precisely at the Malimongan Tua Village Office located at Jl. Salemo. This village has a dense population with a diverse population composition, the majority of which are Bugis-

Makassar, but there are also other tribes such as Toraja, Mandar, and other tribes (IDalamat, 2024; Rafi, 1999). The majority of the population in Malimongan Tua Village are Muslim, but there are also Christians and Hindus (Ibest, 2023; Kusnandar, 2022; Yunus, 2021). Public facilities such as mosques, health centers, and traditional markets are the center of economic activities for the local community.

The system development method used is the waterfall method, which describes the software development process systematically and sequentially, with a development model that follows a linear flow from the initial stage to the final stage of system development.(Prabowo, 2020; Wahid, 2020). Testing is done using the BlackBox method, where this test assesses the external functions of the application without examining its internal structure or source code. BlackBox testing focuses more on what the system does rather than how it works.(Setiawan, 2021; Team, 2023).

Results and Discussion

The results of this study are in the form of an Android-based public complaint service system in Malimongan Tua Village, Makassar. Before this service system application is implemented, an application test will be carried out using BlackBox. The following are the results of the BlackBox test which can be seen in Table 1 and Table 2:

Table 1. Results of Blackbox web admin testing

Testing	Expected results	Test results	Conclusion
Click Linkhttps://pengaduan-malimongantua.akba2024.my.id/	Displaying the login page	In accordance	Valid
Click the Login button with the correct data	Showing the home page	In accordance	Valid
Click the Login button with incorrect data	Displaying warning signs	In accordance	Valid
Click Home Menu	Displays the Number of Complaints, Number of user complaints processed and Complaints Resolved	In accordance	Valid
Click the User List Menu	Show Number of Android App Users	In accordance	Valid
Click the Complaint Data Menu	Displaying the Complaint List Sub Menu and Complaint History Sub Menu	In accordance	Valid
Click on the Complaint List Sub Menu	Displays a list of unconfirmed complaints	In accordance	Valid
Click on the Complaint History Sub Menu	Displays Complaint data processed and complaints completed	In accordance	Valid
Click the Report Menu	Displays Complaint Reports that have been processed	In accordance	Valid
Click the Exit Button	Back to the login page	In accordance	Valid

Table 2. Blackbox testing results of Android applications

Testing	Expected results	Test results	Conclusion
Account Registration	Displays the account registration page to create an account.	In accordance	Valid
Click the Login button with the correct data	Showing the home page	In accordance	Valid
Click the Login button with incorrect data	Displaying warning signs	In accordance	Valid
Forgot Password	Displaying the page for password	In accordance	Valid
Home page	Displaying the dashboard page	In accordance	Valid
Complaint Menu	Displaying complaint format	In accordance	Valid
Complaint History Menu	Displays the entire complaint history	In accordance	Valid
Menu About	Displays information about the application	In accordance	Valid
Profile Menu	Display biodata and reset password	In accordance	Valid
Click the Exit Button	Back to login page	In accordance	Valid

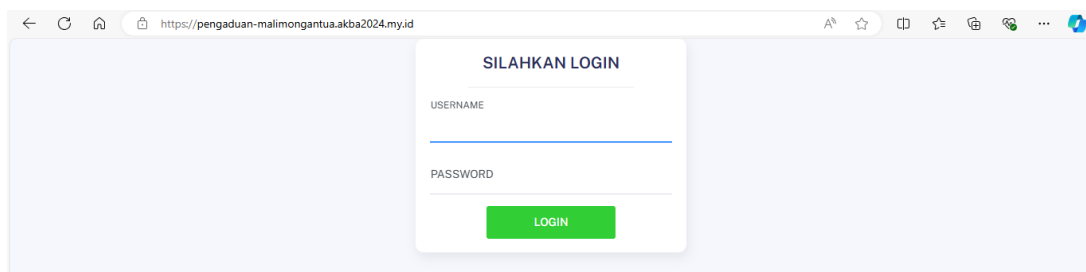The appearance of the system pages that have been designed can be seen as follows:

Figure 1. Admin login page

In Figure 1, the login display is used by the admin to enter the system. In the login, there are two fields, the first username is used to enter the email and the password field is used to fill in the password. The purpose of the login menu is to limit access only to registered or authorized users, as well as to protect personal data or information of users (Supriyanto, 2023; Long-lasting, 2024).
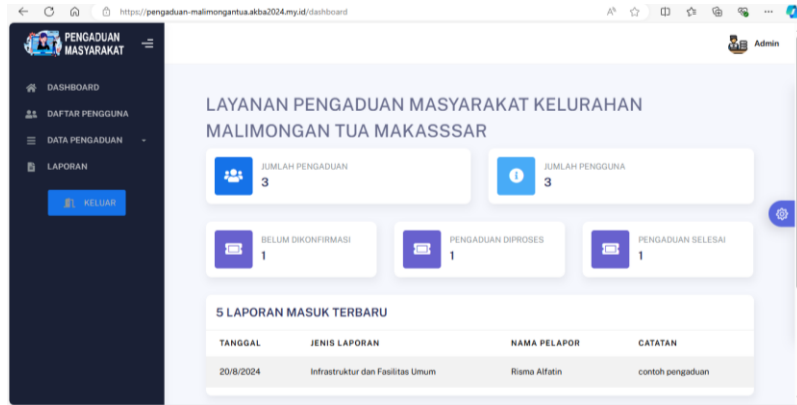

Figure 2. Home page

In figure 2 the admin homepage is used to view data more quickly and easily. On the homepage there are the number of complaints, the number of users, complaints not yet confirmed, complaints processed and complaints completed.
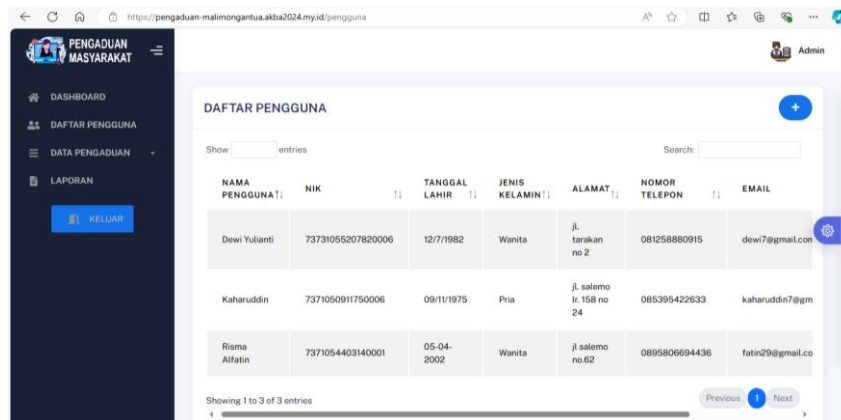

Figure 3. User list page

In figure 3 the user list page is a display to see the number of application users on Android. On the user list page there are features to add users and search filters.

Figure 4. Complaints list page

In Figure 4, the complaint list page is used to display a list of unconfirmed complaints. On the complaint list page, there is a search filter feature and a button to display the amount of data to be displayed.
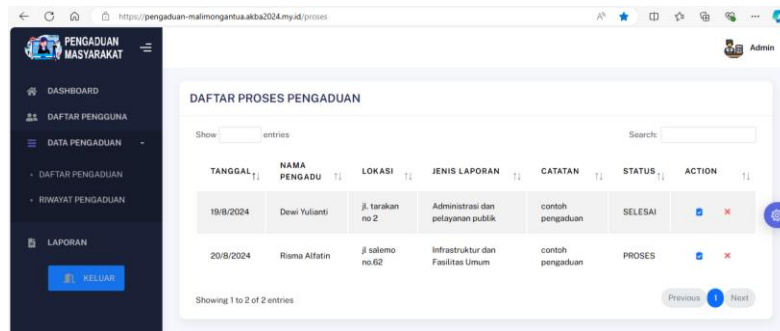

Figure 5. Complaint history list page

In figure 5 the complaint history page is used to see a list of complaint processes carried out by Android application users. On this page there are features to delete and confirm complaints made.
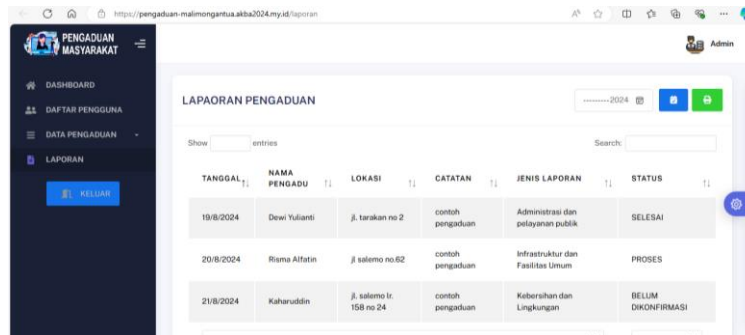

Figure 6. Report page

In Figure 6, the complaint report page is used to view the complaint report as a whole. On this page there is a feature to display the complaint month that will be used as a data archive and a button to print the complaint report.
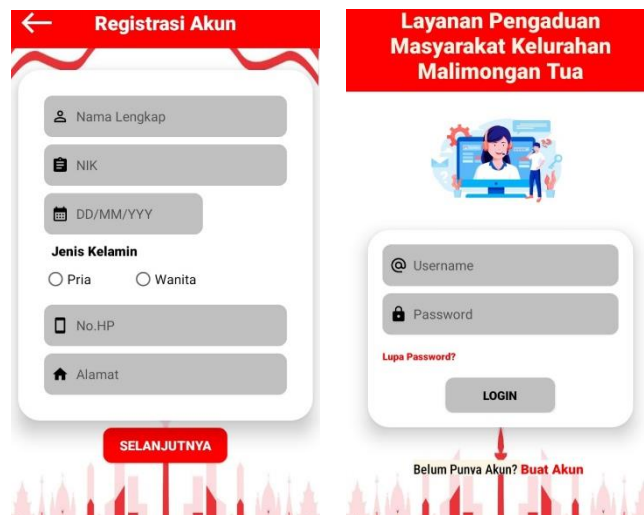

Figure 7. Android application account registration page and login page

In Figure 7, the account registration view on Android is used to create an account before accessing the Android application. The account registration view on Android allows new users to create an account in the application. This view is one of the important steps in the user experience, because it is the starting point where new users begin to interact with the application. A well-designed registration view can increase user registration rates and provide a positive first impression. The Android login view is used to authenticate users before accessing features in the Android application. On this Android login view, there is a feature to create an account when the user does not have an account.

Figure 8. Forgot password page and home page of android application

In figure 8 the forgot password display on android is used to help users who do not remember their passwords to be able to access their accounts again. The home page display on android is used as an information center for users after successfully logging in. On the home page there are several menus that can be accessed by users.
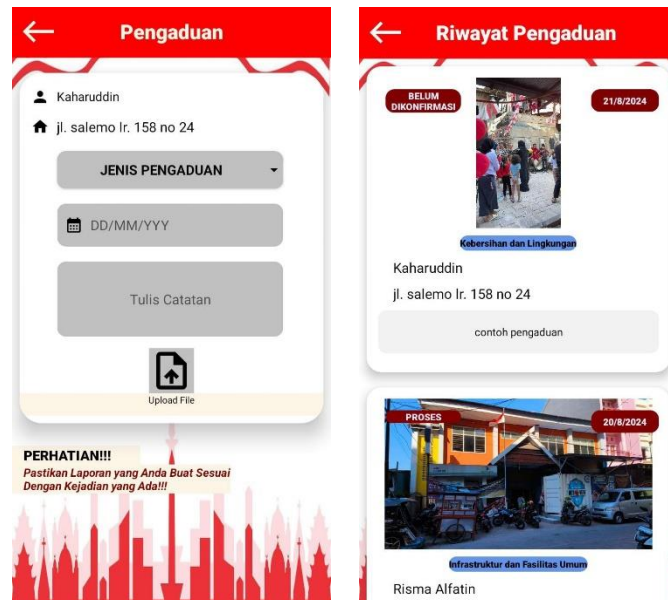

Figure 9. Complaint page and complaint history for Android application

The Complaints view on Android is used for users to report problems and complaints. On the complaint page display there is a feature to upload photos as evidence to make a complaint. The complaint history display on the Android application is used for users to see the history of complaints that have been previously submitted. On the complaint history display there are several statuses, namely, unconfirmed status, process status and completed status.

Figure 10. About application and profile page

In Figure 10 The About view on Android is used to provide information about the application to the user. This view contains information about the application creator. The Profile view on Android is used to display personal information contained in the application. In this profile view there is a button to reset the password, if the user forgets the password on the account.

Next is user acceptance testing. UAT (User Acceptance Testing) is the final test of product development to validate that the system built is in accordance with user needs. However, in its implementation, it is still less than optimal so an evaluation is needed to identify the UAT process. In running the Android Application, it was tested using UAT (User Acceptance Testing). The test was carried out by giving 10 statements to respondents (the Public) via the Google form questionnaire link where the answers to the statements consist of levels that can be selected and can be seen in Table 3.

Table 3. Assessment weighting

Strongly agree	SS	5
Agree	S	4
Disagree Less	KS	3
Don't agree	TS	2
Strongly Disagree	STS	1

Source : (Asrin, 2024)

The calculation of the assessment weight of the UAT (User Acceptance Testing) answers is carried out to produce a percentage that indicates the level of user satisfaction with the application. This percentage is categorized as follows: a value of 1 to 40% indicates that the application has not met expectations, a value of 41 to 80% indicates that the application is quite good and satisfactory, while a value of 81 to 100% indicates that the application is very good and in accordance with expectations.

Table 4. Questionnaire questions and weighted summation

No.	Statement	Statement Weight				
		SS	S	KS	TS	STS
1	This application's appearance is attractive	19	10	1	-	-
2	This application makes it easier to process complaints.	12	18	-	-	-
3	This application is easy to understand	13	16	1	-	-
4	This application provides the information needed	11	16	3	-	-

No.	Statement	Statement Weight				
		SS	S	KS	TS	STS
5	This application provides appropriate output	14	15	-	1	-
6	This application is easy to use	9	18	3	-	-
7	Satisfied with the features of this application	16	11	2	1	
8	This application provides a very fast response	9	21	-	-	-
9	Clear and simple application structure	14	14	2	-	-
10	This application can be accessed in real-time so that it can make it easier for users to use the application.	9	21	-	-	-

The data obtained is processed by converting each answer point with a predetermined weight according to the answer value weight table. From the calculation results by converting each answer to the predetermined weight, the results are obtained in Table 5.

Table 5. Questionnaire data after being added up

No.	Statement	Statement Weight					Amount
		SSx5	Sx4	KSx3	TSx2	STSx1	
1	This application's appearance is attractive	95	40	3	-	-	138
2	This application makes it easier to process complaints.	60	72	-	-	-	132
3	This application is easy to understand	65	64	3	-	-	132
4	This application provides the information needed	55	64	9	-	-	128
5	This application provides appropriate output	70	60	-	2	-	132
6	This application is easy to use	45	72	9	-	-	126
7	Satisfied with the features in this application	80	44	6	2	-	132
8	This application provides very fast response	45	84	-	-	-	129
9	Clear and simple application structure	70	56	6	-	-	132
10	This application can be accessed in real time so that it can make it easier for users to use the application.	45	84	-	-	-	129

From the data in table 5, it can be concluded that the results of this study indicate that the Public Complaints System at the Malimongan Tua Village Office, Makassar is included in the very good category with a questionnaire value of 87.4% which is obtained from the average results of the description of the questionnaire with the following calculation $(92\% + 88\% + 88\% + 84\% + 88\% + 84\% + 88\% + 86\% + 88\% + 88\%) / 5 = 87.4\%$.

Figure 11. Information system handover documentation

Figure 12. Group photo of Malimongan Tua Sub-district employees

Conclusions

Research conducted to optimize the Public Complaint Service System in Malimongan Tua Village, Makassar, which aims to provide convenience in accessing Complaint Services at the Village Office. From the results of the research and development carried out, several conclusions can be drawn, namely, the Public Complaint Service system designed allows the public to make it easier to submit complaints or complaints related to existing problems. The system design used must consider aspects of ease of use, as well as reliability in receiving and processing complaints from the public. This application is integrated with the internal Village system, namely the website, allowing consistent data and synchronization. This facilitates reporting in the process of making better decisions by the Village Office. The implementation of an Android-based public complaint service system in Malimongan Tua Village, Makassar shows that this system is able to increase responsiveness in handling public complaints. The results of the UAT test conducted and involving 30 respondents showed that this study was very good with a questionnaire value of 87.4%. With this system, it is expected to facilitate the complaint process and improve public services in Malimongan Tua Village, Makassar.

Based on the conclusions that have been presented, the Android-based Complaint Service System at the Malimongan Tua Makassar Village Office still requires further development. Therefore, in subsequent research it is recommended to carry out development, such as adding features that facilitate sending information to the sub-district office. In addition, future developers are expected to be able to fix existing deficiencies, add more complex functions, and improve the appearance of the user interface to make it more attractive and intuitive.

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