

## Development of a Village Citizen Reporting Website for Smart Village Village Public Services

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### Abstract

*The development of technology that has been supported by the government makes it easier for citizens to get information, and can influence society to get information and participate in public policy. The development of technology carried out by the government starts from public services on digital platforms, such as websites or village applications. Smart Village initiated by Telkom University Surabaya innovates by providing a website to help citizens with easy complaints to providing a space for community aspirations that can be accessed anywhere and anytime by the people of Panjunan Village. The Public Complaints Website has 31 features for citizens, officers and admins, these features have been tested functionally, and have been tested on several users, in the test no functional errors were found in the sense that the system is ready to use.*

**Keywords:** *Technologi, Website, Complaint.*

### INTRODUCTION

Equitable national development in Indonesia refers to SDGs (Sustainable Development Goals) or can also be called Sustainable Development Goals. SDGs have 17 goals, goal 9 refers to three pillars, namely Industry, Innovation and Infrastructure. One indicator of the success of goal 9 (9.c) is access to Information and Communication Technology (ICT). ICT is a field that includes the internet, platforms, social media applications, etc. ICT also contributes to sustainable development and growth in energy efficiency (Sudirman, 2023).

The existence of Information and Communication Technology has changed the government's interaction or communication with the community, thus also influencing the community to obtain information and participate in public policy (Amirullah Bandu, 2024). Several efforts have been made by the government to make changes in the digital era, namely by digitalization by providing digital platforms (Amirullah Bandu, 2024). Digital platforms were developed to support intelligent systems by collecting real-time information for purposes of facilitating decision making (Sadik et al., 2024). Telkom University Surabaya Campus has developed many digital platforms that have been used by the public (Rizky Fenaldo Maulana, 2023) (AWSB Johan, 2022).

According to data from the SID Kemendesana page which was last updated in September 2024, the level of achievement of sustainable development (SDGs) in Panjunan Village, District. Sitsampeyan, Gresik Regency, East Java, has a score of 44.42 with a level of 0.0 for goal 9 (Kemendesana, 2024). From this data, Telkom University Surabaya took the initiative to make Panjunan Village a village supported by Telkom University to develop an ICT smart village. Panjunan Village has a population of around 975 heads consisting of 495 men and 480 women. Most of the residents of Panjunan Village earn their living as farmers and fish basket craftsmen.

From the results of observations that have been made, Panjunan village has a digital platform in the form of a village website aimed at public services including birth certificate services, death certificates, electronic KTPs, moving in & out, KIA applications, and reprinting family cards. Another observation result is that the citizen complaint system is still offline by visiting the village office or writing down their complaints on paper and then collecting them in the complaint box located at the village office, and if they follow up on the complaint, residents must go to the village office and sub-district office to get a solution. Not only complaints to get information, residents have to

go to the village and sub-district offices to get information.

There is no digital platform that makes it easier for citizens and also does not interfere with citizens' work in getting information and making complaints. Therefore, the FIF Community Service Team innovated to create a complaint website based on research entitled "Implementation of a Website-Based Community Complaint Service System for Medan Ampalas District" which states that public service regarding community complaints is a form of government participation to build and monitor the performance of government agencies in serving the community. , therefore, in this research, we innovated by creating a website as a space for community aspirations, with the flow of the website being that the community sends their complaints via the aspiration space website, then it is checked by the admin to be given to the local sub-district head (Sansena, 2021).

Similar research entitled "Android-Based Village Community Complaint Information System" also states that it is important to provide space for aspirations for Android-based communities, with an application flow, namely residents download the application and are required to have an account to send aspirations accompanied by evidence in the form of photos (Mutaqin et al., 2022).

With the existence of a digital public service platform in Panjunan village, the aim is to develop a complaint website for the people of Panjunan village, namely to make it easier for residents to convey their complaints and aspirations through an efficient website that can be accessed 24 hours so that it does not interfere with residents' work and there is no need to go to the village or sub-district office to follow up on complaints. has been posted on the website as well as training citizens to encourage Information and Communication Technology skills.

## METHOD

The location for carrying out this community service is in Panjunan Village, Sittingsampeyan District, Gresik Regency, East Java Province. This community service activity

involved the Community Service Team from FIF Telkom University Surabaya to develop a reporting website. So that this activity can run well, it is necessary to carry out a flow of activities, in this research the flow uses the SDLC (Software Development Life Cycle) method and uses the Waterfall approach. This SDLC method is a stage in developing a program and a system development methodology based on proven testing methods. The SDLC method used in this research is the Waterfall model. Waterfall is a classic life cycle model where this model is a system development stage or flow that is very clear, sequential, and the possibility of changes in requirements at each stage is very minimal. The Waterfall model can be interpreted as saying that the system development process must complete one stage to proceed to the next stage. Therefore, the following are the stages in this research using the waterfall method starting from requirements analysis, system design, implementation or code writing, testing, deployment & maintenance.

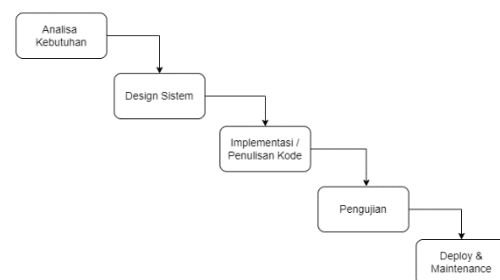


Figure 1. Methods Used

At the needs analysis stage, the FIF community service team made observations in the village and the results of the observations were new findings regarding residents' problems, that residents found it difficult to make complaints or obtain information. There are offline facilities, namely by visiting the village or sub-district office to meet officers or writing their complaints in the complaint box, and if the complaint is not followed up by officers, then residents must submit a complaint again. Most of the Panjunan village residents' livelihoods are farmers and fish basket craftsmen. If the complaint process is carried out, the residents will leave their jobs and this could affect the residents' income. Therefore, innovation to

overcome this problem, and in accordance with one of the goals of FIF's service in creating an ICT-based smart village in the form of developing a reporting website for residents, was then approved by the Panjungan village in February 2024, the team determined what was needed to build the system.

After analyzing the system requirements, the team carried out the system design stages to make it easier to understand the system creation flow, namely: *usecase diagram* can be seen in picture 2, *activity diagram* can be seen in picture 3, *flowchart* system can be seen in picture 4, and *design* the database can be seen in Figure 5.

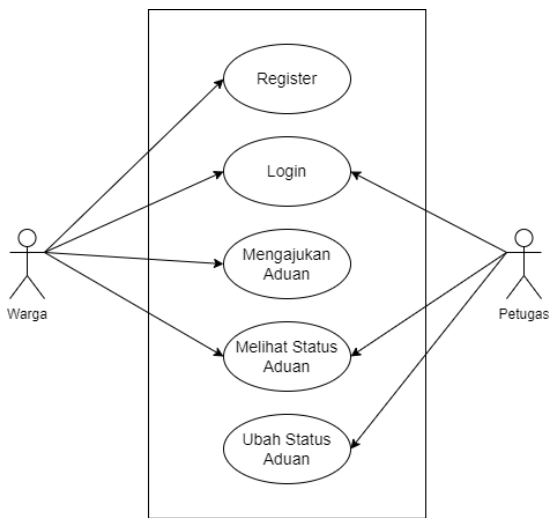
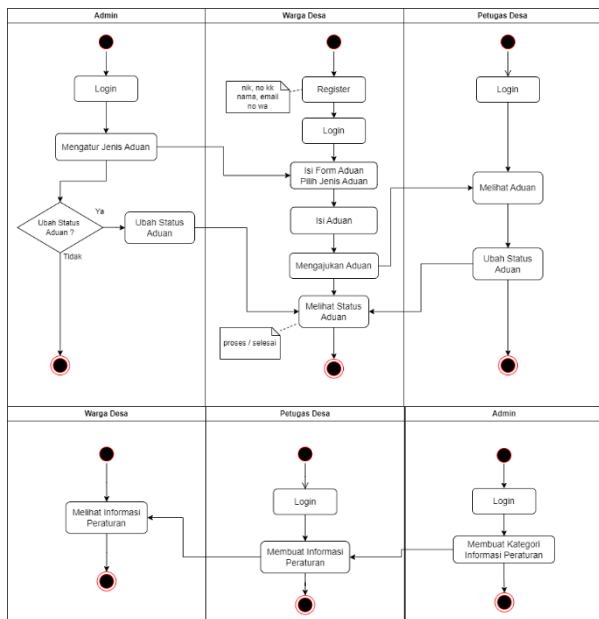


Figure 2. Usecase Diagram



Picture 3. Activity Diagram

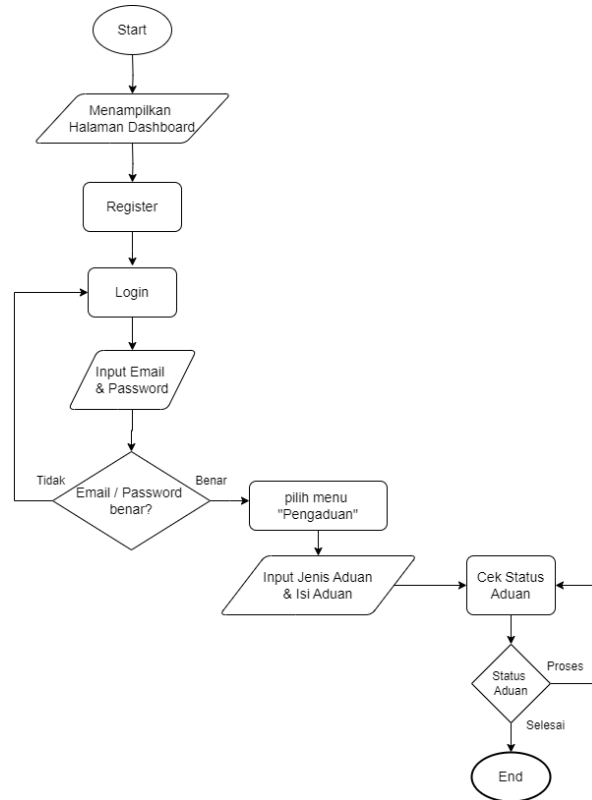


Figure 4. System Flowchart

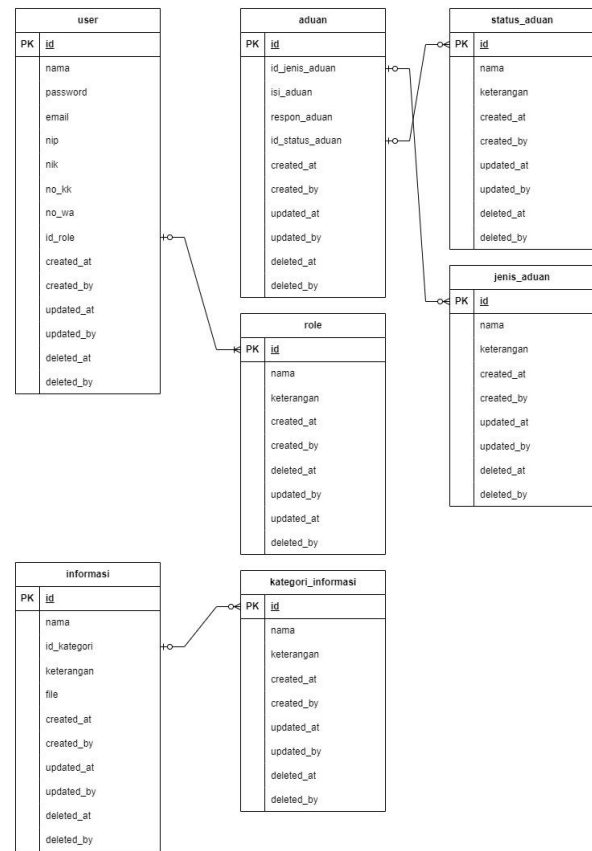


Figure 5. Database Design

After designing the system, the team implemented the creation of a system with an Interface (FrontEnd) using the React Js programming language, and System Infrastructure using the PHP programming language using the Laravel Framework. In this system there are features, including citizens can submit complaints, citizens can see the complaint process, citizens can see village regulations. Not only residents can use the website, but village officials can also use the feature to respond to citizen complaints, manage information for residents, and there is also an admin feature to manage the website by adding complaint types, changing complaint types, deleting complaint types, and adding information categories, change information categories, delete information categories, and can also manage accounts that have been registered on the website.

The next stage is testing, where after completing implementing the code as a whole, black box testing is then carried out, to avoid errors during deployment. Black block testing is a test that focuses on the function of the system features that have been created.

The final stage is deployment and maintenance, where the code will be uploaded and given a hosting domain so that it can be accessed by everyone, while the maintenance stage is where there is the possibility of errors in the program that were not detected in the previous stage.

## RESULTS AND DISCUSSION

Implementation of community service in Panjunan Village, Sittingsampeyan District, Gresik Regency, East Java Province, in February 2024 carried out village observations, by looking at its suitability with the FIF Tel-U Surabaya community service objectives in creating an ICT-based smart village, after conducting observations then submitted a proposal for approval for conducting research and developing systems to help villages, and gathering human resources to form a Community Service Team. In March a second observation was carried out to analyze the needs of the Panjunan village community, and describe the innovations and features that would be developed.

The results of the second observation on March 29 2024 showed that residents did not yet have the means to report complaints to the village, therefore the village agreed to develop a villager reporting website with various features to manage citizen complaints.

Following up on the results of the observations, the team carried out system design by creating a system flowchart, usecase system, activity diagram, database design and continued with implementing the program code. At the stage of implementing the program code, the team uses a web service using the PHP programming language, the Laravel framework with the REST API architecture, the choice of program language and architecture to ensure that the level of platform limitations is minimal so that users can easily find websites and the level of security is reliable because of the Laravel framework. provides authentication. Apart from that, to implement the interface on the website, the Java Script programming language React Js framework is used because the UI development is more interactive, and provides speed, simplicity and scalability.

The development of the Panjunan Village Resident Reporting Website includes several features, namely residents can submit complaints, residents can see the complaint process, and residents can see village regulations. Not only residents can use the website, but village officials can also use the feature to respond to citizen complaints, organize information for residents, and there is also a super admin feature to manage the website. The Reporting Website can be accessed on desktop up to *smart phone* with the [linkreportpanjunan.com](http://linkreportpanjunan.com)



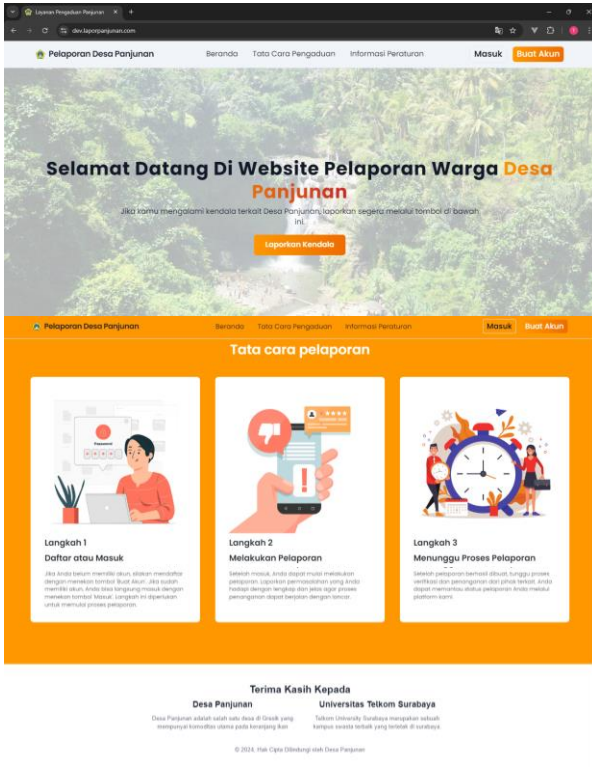


Figure 6. Website appearance

After website development is complete, and testing has been carried out using the black box method, functional testing where all feature functions are running as they should.

Table 1. Black Box Test Results

Feature	Role	Results
Register	Inhabitant	Succeed
Login	Inhabitant	Succeed
Regulatory Information	Inhabitant	Succeed
Complaint Procedures	Inhabitant	Succeed
File a Complaint	Inhabitant	Succeed
View Complaints / View Complaint Responses	Inhabitant	Succeed
Login	Officer	Succeed
View the Complaint List	Officer	Succeed
Responding to Complaints	Officer	Succeed
View Information List	Officer	Succeed
Adding Information	Officer	Succeed
Changing Information	Officer	Succeed
Deleting Information	Officer	Succeed
Login	Admin	Succeed

View the Complaint List	Admin	Succeed
Responding to Complaints	Admin	Succeed
Added Complaint Types	Admin	Succeed
Changing the Complaint Type	Admin	Succeed
Delete Complaint Type	Admin	Succeed
View Information List	Admin	Succeed
Adding Information	Admin	Succeed
Changing Information	Admin	Succeed
Deleting Information	Admin	Succeed
View the Information Category List	Admin	Succeed
Added Information Categories	Admin	Succeed
Changing Information Categories	Admin	Succeed
Deleting Information Categories	Admin	Succeed
View User List	Admin	Succeed
Adding Users	Admin	Succeed
Changing User Roles	Admin	Succeed
Deleting Users	Admin	Succeed

Once the functionality on the website is working, it will be deployed to be handed over to village officials and used by village residents. Socialization and reporting website training was held on September 25 2024 to Panjunan village officers at the Panjunan village hall, the team trained village officers to be able to operate the website correctly, especially on the admin and officer side, not only that, officers were also trained on how residents report problems via the website Panjunan village reporting. After the officer training, there was outreach for residents delivered by village officers and accompanied by the FIF Community Service Team.

**CONCLUSION**

This Panjunan village resident reporting website is the implementation of a digital platform in rural areas as a step forward for sustainable development in Indonesia. This digital platform aims to make it easier for village residents to convey their complaints and aspirations. Panjunan village residents from anywhere with 24-hour access without needing to go to the village or sub-district office, so it doesn't interfere with residents' activities or

work. The total features available on the Panjunan village reporting website are 31 with details of 6 features for residents, 7 features for officers, and 18 features for admin, and the success rate of the features on the reporting website reaches 100%.

### SUGGESTION

Suggestions that can be given from this research for developing this system as a technological development are as follows:

1. The system can also be made into a smartphone application
2. The system can include a photo of the complaint as evidence
3. The complaint system can crawl from the internet

### ACKNOWLEDGEMENT

Thank you to the Panjunan Village Officials, Panjunan Village Residents who have provided the opportunity for this research. Thank you to the FIF Community Service Team, namely Kharisma Monika Dian Pertiwi, S.Kom., M.Kom, Dahliar Ananda, S.T., M.T., Daud Muhajir, S.Kom., M.Kom., and students who helped with this research (Fadhlan Syahran J, Kahil Akbar Bayu A, Moch Andi Divangga P, Tita Arum Shela S).

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